

INTRODUCTION TO
KANT'S CRITIQUE OF
PURE REASON

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BY

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PREFACE

THE aim of philosophers is always to understand and to interpret the achievements of scientific and other specialists in different fields. This does not mean that the philosopher should tell the scientist how to be a good scientist or the politician how to be a good politician. It would indeed be both foolish and presumptuous to inform the physicist that a particular view about the nature of space or matter cannot be correct because it has awkward metaphysical implications. Such a contention would be intelligible only if metaphysics possessed a peculiar subject-matter of its own about which it could make discoveries without reference to what occurs in other departments of knowledge. In fact, however, it has no such subject matter, but its function is none the less important. It must supplement the work of the specialist not by undermining or destroying his hypotheses, a pursuit which is both unwarranted and unprofitable, but by thinking out the general view of the universe and of man's place in it which those hypotheses, if verified, must entail. Kant's claim to be a great philosopher rests on the uncommon insight and perseverance with which he devoted himself to this task. . . .

It is not my intention in this book to add yet another to the imposing list of commentaries on the *Critique of Pure Reason* as a whole or in part which have appeared during the last twenty years. Those of Professor Paton¹ and Professor de Vleeschauwer² in particular are essential to any serious student of Kant, and I have learned a great deal from them. My own purpose, however, is more limited. It is to provide an introduction to Kant's Critical Philosophy and especially to draw attention to an aspect of his thought which seems to me in danger of being overlooked because of the thoroughness with which the *Critique* as a contribution to modern epistemology has been analysed and documented. It is not always remembered that since Kant was thinking and writing in 1781 and not in 1940, the material with which he was concerned differed in many important respects from that with which we are now confronted. The views of Descartes, Leibniz, and Newton, not those of Einstein, Heisenberg, and Schrödinger, provided his problems. Hence if we are to understand and appreciate him we

¹ *Kant's Metaphysic of Experience* (George Allen & Unwin, 1936).

² *La Déduction Transcendentale dans l'Œuvre de Kant* (Paris, 1934).

PREFACE

must begin by recalling, at least in outline, the physical and philosophical beliefs of his contemporaries and predecessors; for it is to the particular difficulties which these encounter rather than to what are vaguely called general philosophical problems that the Critical Philosophy owes its origin and development.

This is perhaps obvious, and I may be accused of merely repeating what requires no confirmation. I submit, however, that even if the importance of historical factors in determining Kant's thought is commonly admitted, their practical effect on both the method and teaching of the *Critique* itself is to a great extent overlooked. For Kant's attitude towards contemporary thought, and in particular contemporary science, is not a matter which concerns only his general approach to and treatment of metaphysics. The whole structure and detailed argument of the Transcendental Analytic is to a great extent determined by it. I have therefore two objects in view. The first is to help the student who is approaching Kant for the first time to realize the actual questions in which Kant was interested and the answers to them which the *Critique* puts forward. This is the purpose of Parts I and II which will, I hope, be intelligible to readers who have no previous acquaintance with Kant's writings. Part III is more detailed and presupposes familiarity with the text of the *Critique of Pure Reason* itself. It does not establish completely my view of the scope and method of the Analytic, but I believe that it does indicate a line of approach which is likely to be profitable and which has received too little attention hitherto.

One result of the addiction of Kant's fellow countrymen to world wars has been that this book has taken as long to produce as did the *Critique of Pure Reason* itself. This, unfortunately, is the only respect in which the two works are comparable with one another.

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PART I

PRE-CRITICAL

I. EUROPEAN INFLUENCES

INTRODUCTION

§ 1

PHILOSOPHERS have usually led uneventful lives, and in this respect at least Kant was a typical philosopher. There is no reason to suppose that his experiences, except in the strictly intellectual sphere, were of the slightest interest or importance if they were, we shall certainly never know it, since his biographer could discover nothing but the most meagre trivialities to record of him. Even his reading would seem to have been copious rather than exciting. Nevertheless it would be a mistake to suppose that, like so many of his contemporaries, he was a mere pedant resenting 'enthusiasm' in all its forms; on the contrary, he thought highly of it,¹ though, apart from some isolated passages such as his tribute to Newton and Rousseau,² his writing showed little sign of this.

No earlier philosopher stands to him as Plato did to Aristotle and although, as will appear later, the views of Leibniz were those which most greatly influenced him, it would be incorrect to suppose that he was at all clearly aware of this himself. For one of the few surprising facts about his development is his reliance on second-rate disciples rather than on immediate contact with important philosophical works. The result of this is that the precise problems which he was trying to solve are not easy to discover, and indeed are not discoverable without greater attention than is usually given to his work and intellectual environment at Königsberg. And that is why the belief that his philosophy though very important, is extremely obscure and difficult to understand is widely held and only partially justified. All serious philosophy is difficult. It consists of concentrated thought about problems which are not obviously relevant to practical life and are for that reason alone unfamiliar and hard to appreciate without considerable practice. This, however, may be at least partially

¹ *Versuch über die Krankheiten des Kopfes*, Ak. ii. 267.

² Hartenstein, *Kants Werke*, vol. viii, pp. 624 and 630.

concealed by the literary skill of the philosopher, though the wisdom of such concealment is open to doubt. It is so easy not to see the difficulties of Hume. But certainly Kant is uncompromising. He makes no attempt to conceal either from his reader or from himself the necessarily arduous character of the work on which he is engaged, and deliberately rejects the temptation to make it appear any more simple than it is.¹ This attitude may be misguided but it is not culpable. The charge against Kant, however, is not that he is difficult, but that the difficulty is superfluous and that what he had to say might have been, and therefore ought to have been, expressed in more simple and lucid terms. I believe that this charge cannot be sustained, and that those who make it fail to distinguish between two quite different inquiries, namely (1) 'What precisely were the questions which Kant was trying to answer and what was his answer to them?' and (2) 'Are Kant's answers to his questions relevant to the questions which I am trying to answer for myself?' These are both sensible, but what is not sensible is to ask 'Did Kant solve the problem of causality?' for this implies that there exist for philosophy, as there do for arithmetic, problems which have no historical context and are therefore capable of being asked and answered in the twentieth century in precisely the same terms as they might have been asked and answered by a competent calculator three hundred years before. If Kant ever set himself to calculate the square root of two to ten places of decimals, he either got the answer right or he did not: and whether he did or not, he might be properly criticized now for the clumsiness of the method which he employed. But to suppose that there is a 'problem of causality' or 'problem of the interrelation of mind and body' which presents itself unaltered to succeeding generations of human beings is mere moonshine. The verbal form of the question may be identical, but that is all. It is therefore neither fair nor useful to analyse the work of Kant or any other philosopher into (a) the eternal problems to which he was trying to find an answer and (b) the historically conditioned and irrelevant form in which his answer is presented. We cannot discard the latter and retain the former, for the former have no existence. They are merely our own favourite difficulties pretending to universal and timeless relevance.

Consequently the work of any great philosopher is doubly hard to understand. His problems were intrinsically difficult, or he

¹ A xviii.

would not have bothered to write about them, and, in addition, we cannot even understand what they were without thoroughly grasping the process through which he went in order to formulate them as he did. If we do not take this trouble we wrongly charge him with obscurity, that is with incompetence as a philosopher, when the fault is our own.

That Kant was sometimes obscure as well as difficult I certainly do not deny, but I hold that much of what is frequently regarded as his obscurity is in fact nothing of the kind but is simply the natural and indeed the only way in which he could put what he wanted to say. I also think it unlikely that anyone will agree with me who does not approach his work historically and consider it as essentially the outcome of a development which took place over the whole of western Europe for two hundred years before the composition of the *Critique of Pure Reason* as well as of Kant's own earlier philosophical training and outlook. It is indeed in the nature and working out of the system of Descartes that the problems of the *Critique of Pure Reason* have their origin, and the solutions which Kant puts forward are such as would naturally occur only to one who had grown up intellectually in the rather one-sided outlook which dominated Europe in the seventeenth and eighteenth centuries.

For the history of philosophy from Descartes to Kant has a genuine unity of its own, even though it must be admitted that any division of the history of philosophy into 'periods' involves some degree of false abstraction.

This unity depends mainly on the almost universal acceptance by educated people of the claims of the new method of mathematical physics to interpret the universe and explain man's place in it. The extent of this acceptance can hardly be exaggerated, and was perhaps attributable not merely to the obvious success of the method in practice but also to the absence of any serious competitor. Evolutionary biology had not yet arisen to give an even ruder shock than the physics of Galileo had done to accepted theological presuppositions.

The relative compactness of the period is further emphasized by the personalities of Descartes and Kant themselves. Each of them commenced serious study as a physicist rather than as a philosopher in the modern sense; and each of them was driven by the necessity of his own thought to come to terms with the metaphysical problems from which physics can never escape. There is

a striking similarity between Descartes's somewhat apologetic assertion¹ that everyone ought to go through the process of rigorous doubting and reassurance once in his life and Kant's contention² that there is no metaphysical problem to which the answer is not provided in the *Critique of Pure Reason*; and the thought which underlies these pronouncements runs through the whole period. Substantially it is that the future lies with natural philosophy and above all with mathematical physics. Metaphysics is indeed of vital importance since it is the foundation on which the whole superstructure must rest; but just because of this it is of comparatively modest dimensions³ and can be mastered once and for all when clearly stated and attentively examined. It is difficult since it involves a high level of abstraction, but those who find this an obstacle should remember, as Kant is careful to remind them, that it is by no means necessary for them to study it.

§ 2

Although there are no philosophical 'problems' which lie about like uncompleted cross-word puzzles set by God to baffle successive generations of professional philosophers, it may fairly be held that there is at least a family likeness between the questions to which men of European culture have thought it worth while to look for answers during the last two thousand years. These may very roughly be grouped as questions concerned with God, the self, and the physical universe. But the emphasis which has been laid on one or another of these topics has differed very considerably. Throughout the Middle Ages the third had naturally occupied a very subordinate place indeed, and it was in restoring it to a position comparable in importance to that claimed by the other two that the philosophical revolution of Descartes ultimately consisted. So thoroughly, however, did he and his contemporaries do their work that the general prima-facie view of the universe held by the educated inquirer as a preliminary to detailed investigation into metaphysics, psychology, or physics changed hardly at all for a period of two hundred years. Indeed we may go further and say that even now it has not changed beyond recognition, and that the uncritical view of the educated man to-day is far more closely akin to that of Descartes than the Cartesian view itself was to the Scholastic position which it superseded.

¹ Descartes, *Prin.* Part I, § 1; cf. *Med.* I ad init. and *Regulae*, VIII.

² A xiii.

³ A xx; B 23.

Certainly biology has made a great difference and has led to the reconsideration if not to the actual reintroduction of those substantial forms and occult qualities to which the philosophers of the seventeenth and eighteenth centuries professed such uncompromising hostility: and certainly, too, this further development has seriously impaired the admirable simplicity of the Cartesian system. None the less, a great deal of it remains in principle unchallenged.

The general notion of the physical universe propounded by Descartes and his successors was atomic. This did not necessarily imply in the seventeenth century any more than it does now, the conception of an enormously large number of minute inelastic billiard balls perpetually colliding with one another and creating the objects which we perceive by their endless rearrangements. Indeed no such view could have been put forward as a completed picture without meeting the criticism that it involved accepting an Epicurean materialism which was theologically indefensible. Nevertheless it is not unfair to say that the first rough draft which had to be worked over and improved upon before it could be finally offered to the public was something on these lines. At least it was universally agreed that there are minute parts of matter which physically affect our sense organs and by so doing convey to us something of the character of the material world; and further that all the bodies which together make up that physical universe behave in accordance with absolutely rigid mechanical laws which are capable of being discovered by the human mind. The discovery of these laws was held to occur partly as the result of the operation of pure thought quite independently of any acquaintance with phenomena, but partly also as a result of observation. The ultimate aim of all investigation was to substitute precise mathematical formulae for the qualitative conceptions of the Schoolmen. In the first flush of their enthusiasm for this revolutionary way of studying nature investigators saw no reason why there should be any limit to its applicability. Mechanics,¹ optics, and astronomy were easily shown to yield results of overwhelming interest when attacked by the new method; medicine, anatomy and physiology offered a further field, and it seemed possible that even chemistry might some day be brought within the sphere of rational knowledge. These, however, were early aspirations. By the end of the eighteenth century doubts were

¹ Cf. Boyce Gibson, *Philosophy of Descartes*, p. 186.

already prevalent as to the extent to which mechanical explanations could really go, and it was Hume's sceptical inquiry as to whether, in the last resort, they could honestly be said to explain anything at all which woke Kant from his dogmatic slumbers and gave the *Critique of Pure Reason* its central theme.

The self or soul was conceived as essentially distinct from the material world, though standing in a vital and more or less unintelligible relation to it. In so far as its operations of thinking, perceiving, and willing did not admit of direct quantitative assessment, they were not very promising material for the new method, and it must be admitted that, on the Continent in particular, the mind tended to be of interest rather as the machinery by which the new knowledge could be acquired than as an object of study in itself. To a more limited extent the same may be said of God. Admittedly no considerable philosopher was an avowed atheist, but, on the other hand, the philosophical importance of the Deity depended very largely on the extent to which the problem of the interaction of mind and body was allowed by any particular philosopher to become a major issue. From a metaphysical standpoint, which was regarded as entirely distinct from that of revealed religion, God was conceived as a *deus in machina*. His function was to bridge the gaps and occasionally also to provide the motive power of the entire contrivance. Thus the universe was openly conceived as a gigantic piece of machinery, comprehensible in principle though not necessarily in detail to the human mind. It was certainly the work or at least the expression of God and bore clearly on it the marks of its divine origin. The more theological philosophers were never weary of drawing attention to the exquisite skill displayed in its workmanship, though they were not always equally ready to acknowledge its apparent defects, for indeed it was for a long time uncertain whether it was more in keeping with theology to regard the machine as so perfect that, once created, it required no further attention (which for practical purposes would make God philosophically irrelevant) or to regard it as perpetually in need of His support (which would reflect somewhat on His mechanical competence).

§ 3

This summary of a general point of view or attitude towards reality needs development and specification in terms of the actual views maintained by some of Kant's more important predecessors.

Before we proceed to this task, however, it is well to consider the fundamental issues to which the view, however generally formulated, is bound to give rise. Of these the first and enormously the most important is the problem of interaction. For if once we grant (and it is absolutely vital to the success of the mechanical method that we should grant) the distinction in kind between what happens in the soul or conscious self and what happens in the material world, we are bound to ask how it is even conceivable that the one should have any connexion with the other at all. Matter, in order to be mathematically determinable, is conceived as just extended, mobile stuff devoid of any perceptible qualities except those with which geometry is competent to deal. Mind, on the other hand, is conceived as necessarily immaterial and non-extended. How, then, can mind by its willing impart motion to matter or matter by its impact produce perceptions in mind? Even the intervention of God as a prime mover to set matter in motion is *prima facie* inconceivable, since God too is necessarily immaterial. This leads to a second serious though less apparent difficulty, namely what account, if any, can we offer of the status of sensation?

The mechanist conception is bound to distinguish sharply the sensible qualitative characteristics of material things from their true or essential characteristics which are purely quantitative. This naturally suggests the conclusion that sensibility is a tiresome and irrelevant intruder which does nothing but interfere with the orderly process by which mind comes to know its proper object, but here the other main tenet of the view stands in the way. For experiment as well as mathematical calculation is necessary to give us knowledge, and without observation of results which is unavoidably sensuous in character, experiment is unlikely to be of any great assistance. Sensation in fact is very troublesome; and we shall find that Kant, like his predecessors, found great difficulty in including it in his final scheme of things.

Finally there is a problem of a different and more obvious kind, namely that of human free will. For if the material universe is really a machine controlled by eternal and unalterable laws of whose existence and nature we can be as certain as we are of the validity of elementary arithmetic, it is not easy to see how either the freedom of man to determine his own action or the omnipotence of God in relation to the self and the world can any longer be maintained.

§ 4

The result of any attempt to classify the influences which have operated in the formation of the completed system of a philosopher is inevitably quite arbitrary. There is indeed the best of evidence for the conclusion that in this as in other matters men are bad judges in their own cases, and it frequently happens that the most obvious influence is missed altogether simply because it is so obvious. In the case of Kant, however, there is a special reason for making the attempt because the philosophers with whose works he was most closely acquainted were not those whose works have continued to be generally read by students of philosophy. The latter, however, are often mistakenly regarded as the principal source of his inspiration. Indeed the plain truth is that no trace is discoverable in Kant's works of anything which we should now regard as a detailed knowledge of the actual writings of any of the four philosophers with whom we are first concerned, namely Descartes, Leibniz, Locke, and Hume. This is not intended to suggest that he had no direct acquaintance with their works, though it would of course be rash to assume that he had anything like the same degree of access to them as the modern student takes for granted.

This is not really surprising since the works of Descartes and Leibniz were simply not available to him in anything like complete collected form and it is highly improbable that he was able to read English sufficiently well to enable him to study Locke or Hume in the original. Consequently his knowledge of Hume did not include any acquaintance with the *Treatise*. None the less, Kant states emphatically that his knowledge is derived from direct and laborious study of his authors and not merely from reports in periodicals, and his treatment of them on the whole bears out this assertion, though his interest was obviously concentrated on the general views expressed rather than on the arguments by which they were supported, and almost his only recognition of a specific philosophical obligation is that to Hume in the Introduction to the *Prolegomena*.¹

But though Kant's acquaintance with what we now tend to regard as the primary sources of his philosophical inspiration was general rather than detailed, his minute study of the eighteenth-

¹ Locke's attitude towards his predecessors was similar. See Gibson, *Locke's Theory of Knowledge*, pp. 182-3.

century German philosophy in which he was himself educated and on which he lectured throughout his active academic life is unquestionable. The metaphysical works of Wolff and Baumgarten and the *Vernunftlehre* of Meier were his daily bread, indeed he must have known them by heart. It is true that even these authors are mentioned but little by name in his major works, but this should not lead us to forget that their opinions were always and inevitably his starting-point. On many vital issues he disagreed with and refuted them, but what is more important is that where he did agree with them he was fatally liable to suppose that no serious difficulty existed. If, therefore, we are to achieve any real insight into what Kant took for granted, which is a considerable part of his view, it is in Baumgarten, Wolff, and Meier that we are most likely to discover it rather than in the leading works of the first-class philosophers. It might indeed be argued that there were many other and better German philosophers in the eighteenth century with whom Kant was acquainted and who exercised a considerable influence on his thought. Moses Mendelssohn, Tetens, and Lambert, to name only three, were in a far higher class than the tedious Baumgarten. This is true, but not to the point. The justification for dealing in detail with the views of these obsolete philosophers is mainly that they were so inferior that hardly any trace of them now remains and that, to English readers in particular, their doctrines are entirely unknown. There is nothing in the English thought of the eighteenth century which corresponds to them at all, and indeed their only claim to resurrection is the influence which they exercised on the development of Kant.

Some explanation may seem to be required for the omission from all consideration of the views of Spinoza and Berkeley. This is not wholly due to considerations of space. As regards the former, his works had little direct influence in Germany till they were brought into prominence by the Lessing-Jacobi controversy in the 1780s, and there is no reason for supposing that Kant had submitted them to any careful study. As regards Berkeley, it is true that Kant mentions him both in the *Critique of Pure Reason* and the *Prolegomena*, but always as a typical rather than an actual philosopher. He is 'the good Berkeley'¹ who, as a result of his failure to apprehend the true nature of space, became a hopeless idealist and 'reduced bodies to mere illusions'. This does not

¹ B 71.

suggest that Kant had ever read, let alone carefully studied, Berkeley's view. Most probably he was acquainted with it only through the extremely misleading account of it given in Beattie's *Essay on Truth*,¹ with which he was certainly familiar.

DESCARTES

§ I

The central doctrine of the Cartesian philosophy is that physics (under which is included the whole of what we now call natural science) must be mathematical in its method if it is to achieve true and valuable results. In his attempt to prove this doctrine Descartes is led to formulate those views of God, the self, the material world, and the connexion or lack of it between them, for which he is now chiefly remembered.

But before we examine his view a caution is necessary which applies, though with somewhat less force, to all his successors with whom we shall be concerned. It must always be borne in mind that neither Descartes nor any other human being began philosophizing in a void. On the contrary, he was well versed in one of the strongest and most influential systems which has ever been worked out, namely that of St. Thomas Aquinas with which he found himself in complete disagreement on a number of major issues. Philosophy, however, is not merely a matter of views, for we cannot even reach a view without going through a process of more or less complex thinking. This thinking is conceptual in character, and the conclusions which it reaches are largely determined by its initial assumptions. Those assumptions, as Kant was the first to emphasize, are implied by the very nature of our thinking; but since the discovery of them involves an exhaustive inquiry into the foundations of our logical procedure, their existence tends to pass unobserved. In the philosophical thinking of Aquinas there were in particular two such assumptions on which his whole system ultimately rested, namely the notions of substance and essence. As will appear shortly, the mechanistic philosophers of the seventeenth and eighteenth centuries all more or less unconsciously retained these notions, and attempted to found on them an entirely different system.² Their doing so is simply another instance of the

¹ James Beattie, *An Essay on the Nature and Immutability of Truth*, 1771, Pt. II, chapter ii. 2.

² Cf. Boyce Gibson, *op. cit.*, p. 164.

tendency, already noticed in Kant, to retain uncritically those elements in a received system which are not openly at variance with newer methods of thought, but it was of far-reaching importance in determining the development of their various doctrines.

Descartes, then, accepted without question the traditional view that everything which exists can be analysed into substance and essence, which between them constitute its reality, and that in addition to being these, it may be found to possess certain more or less accidental properties and relations known as modes. His revolution lay in an entirely different conception of what in fact were the substances, essences, and modes of things. St. Thomas had maintained that substance, or that which truly exists in its own right and which needs nothing further to support it in existence (such as a tree or a table as contrasted with a colour or a relation), was a union of form with matter. Thus the true reality of any particular thing was the embodiment in it of a form or species, and knowledge consisted in the apprehension by the mind of that species. To enable it to do this the mind was endowed with the power of making actual or explicit the nature of the species immediately apprehended in sense perception, and the method of science became primarily an analysis of sense experience with a view to discovering what elements in the perception of an object belonged to its species, that is, constituted its real essence, and what were merely accidents or modes. Thus it might be discovered that the species man involves as part of its essence the possession of reason, whereas the possession of red hair is merely an accident to it. It is a natural corollary of this view that there is to be found in nature only a limited number of substantial forms, and that these have been unalterably determined by the divine will.

It is quite erroneous to regard this theory as primitive or unsatisfactory in itself, since many of its leading features though exorcized by the physicists have subsequently been reintroduced under thin disguises by the biologists of the nineteenth and twentieth centuries. Nevertheless, when held in an obscurantist spirit it was liable seriously to interfere with the freedom of investigation on purely mathematical lines, and it must be admitted that the Church, in the early seventeenth century in particular, was naturally rather doubtful as to how far such investigation could be allowed to go without becoming a menace to revealed theology with which the view of Aquinas was inextricably intertwined.

§ 2

We are now in a position to consider the extent and also the limitations of the change in the traditional philosophy which Cartesianism produced, and the most convenient point from which to set out is the problem of perception in relation to knowledge. Aquinas and his followers maintained that the data of perception, when abstracted and refined by the intellect, were in fact knowledge. Hence for them sensibility was an essential element in the process of coming to know the real. In this respect Cartesianism is from the very start unalterably opposed to the traditional view in maintaining that the data of perception provide us with a false and not a true representation of real things. Indeed no other position was logically tenable by the new philosophy; for if knowledge of the real must in the end be mathematical, it follows that the real, in so far as it is knowable, must be susceptible of mathematical treatment. The data of the special senses, however, colours, sounds, &c., do not directly admit of such treatment, and consequently they cannot as such be objects of scientific knowledge at all. They are intelligible only in so far as we regard them as the effects or perhaps the concomitants in consciousness of something of an entirely different nature from themselves which can be treated mathematically and therefore can establish a *prima-facie* claim to be regarded as independently real. This conclusion was entirely in harmony with the results of the gradually evolving science of optics as well as with the physiological theory of perception, and it led naturally to the further notion that the physically real was nothing but material particles in motion, and that these particles by their impact on the sense organs produced somehow in consciousness the immediate data of sense.

This, however, leads to a further drastic revision of the traditional system, since it is no longer possible to regard the reality of an object as being bound up with the presence in it of a particular sensible form. On the contrary, its reality must now be looked for in the material particles of which it is composed, and as all bodies, *qua* mathematically cognizable, must be held to consist of material particles, it follows that the question to be answered if we are to determine what substance is, becomes simply what is the essential characteristic of matter? This, however, is only half the problem. For what is postulated is not merely that things can be known by

mathematical reasoning, but also that there are beings capable of reasoning mathematically about them.

This method of formulation suggests immediately the existence of a non-material substance or mind entirely distinct from the material substance or matter which in scientific investigation it is attempting to know, and this is what Descartes in fact maintained; but, having gone so far, he fell back without a struggle into the view which he was criticizing. He rejected substantial forms indeed, and thereby immensely simplified the general conception of the universe; but he accepted the view that every independent real (or substantial thing) must have a real essence which makes it what it is, and that this essence is somehow differentiated into ways or modes of existence. For the innumerable kinds of scholastic substance he substitutes two only, namely material and immaterial. Each of these is held to possess only a single essential characteristic: immaterial substance is conscious, material substance is extended, and these essences are further specified into modes, e.g. willing, perceiving, figure.

From this position two vital consequences necessarily followed. In the first place all the properties of body were so unequivocally distinct from those of mind that any interaction between the two different kinds of substance was by definition inconceivable; and in the second, mind or thinking substance was, also by definition, more immediately knowable than body. But the knowability of body was precisely what Descartes wanted to assert, and indeed his whole metaphysics from first to last is aimed at demonstrating it.

There can, however, be no empirical demonstration of it, since that in body which is knowable, namely the relations and motions of minute particles, is simply not an object of sense at all. Hence the proof must be *a priori*. The immediate certainty of my own existence is held to be a ground for demonstrating the existence of God, and when this has been done the veracity which belongs necessarily to God precludes me from doubting the validity of the mathematical method. Here again it may be noted that Descartes was quite prepared to accept rather easily the methods and demonstrations of the Schools provided that they were not inconsistent with what he held to be the truth. There is not the slightest ground for charging him with hypocrisy in this respect, nor can it be plausibly argued that the introduction of God into the system was a mere evasion to satisfy contemporary theological prejudice.

All the evidence goes to show that Descartes was throughout his life a perfectly sincere Christian, and although it is true that his physical theory is quite tenable independently of his proofs of God's existence, this point is in itself irrelevant. What is clear is that, apart from his theological excursus, his physics would wholly have lacked metaphysical support and have remained merely a tentative hypothesis, and this was precisely what he wanted to avoid.

§ 3

The working out of this essentially simple metaphysical view requires some further consideration. We have to start with material and immaterial substance and God who creates both and somehow holds them together in spite of their irreconcilable diversity. Material substance has one essential property and one only, namely that of extension, and the implications of this doctrine are of considerable importance and interest. In the first place, matter must be held to be wholly inert: its only necessary attribute is extension and it cannot therefore be held to contain in itself any active power whatever. Secondly, there can be no void or empty space, since as extension is the essence of matter there can be no extension which is immaterial any more than there can be anything material which is not extended; and from this it follows that there can be no limits or bounds to extended substance, since that which bounded it could be conceived only as empty space which *ex hypothesi* has no existence. Thirdly, motion does not belong to the essence of matter: but neither is it consistent with the new physics to treat it as a mere accident or mode of matter (though Descartes himself sometimes makes this mistake); therefore motion must be regarded as simply an ultimate fact introduced into the material universe by the miraculous agency of God. And lastly the conception of extension as the sole essence of material things implies that all divisions within extension are in the end illusory. They are what Descartes described as *entia rationis*, and are to be regarded as mere modes or accidental determinations of a single indivisible extended substance.

As contrasted with material substance, thinking substance is conceived as pluralistic. There is a multiplicity of finite and mutually independent thinking substances known as selves. Each of these has consciousness as its essence; and, again in contrast to material substance, is non-extended and active. Its modes are

thinking and willing, which belong to it in its own right, and also sensing which arises in a manner which to us must remain completely mysterious from its union with the body of which, again (in accordance with the traditional view to which in this connexion Descartes sees no particular objection), it is actually the substantial form.

As before mentioned, the self is naturally better known than body ever can be, not in the sense that we can formulate a greater number of indubitable propositions about it, for this is not the case, but in the sense that its actual existence cannot logically be called into question whereas that of the body and of extended substance can be. In other words, the idea of extension which I reason about in physics might be arbitrarily produced in my consciousness by God (as Berkeley subsequently held that it was) without there being at the same time a real extended substance to correspond to it, but the line of thought which culminates in the formulation of the *cogito* satisfies us that no similar possibility exists in relation to myself.

The place filled by God in the system needs no further exposition. Apart from His functions of guaranteeing the validity of my physical knowledge, introducing motion into the otherwise inert mass of extended substance, and miraculously combining mind and body into a single whole, He is conceived strictly on the traditional model (as omnipotent, omniscient, &c.). But it must always be emphasized that the performance by Him of those functions is absolutely vital to the existence of Descartes's metaphysical system.

§ 4

Cartesianism alters radically the purpose as well as the method of philosophical inquiry. Metaphysics is no longer to be conceived as a straightforward extension of physics concerned with being in general as distinct from being of a particular kind; nor is it merely the handmaiden of theology. Its aim is rather to mediate between the two studies and to show that their fundamental propositions, far from being inconsistent with one another, are mutually supporting elements in the whole system of the universe. To do this successfully, however, it must show that there is some intelligible connexion between the world of physics and that of theology, and in this respect it must be admitted that the metaphysics of Descartes is far from successful. It shows no link whatever

between the notion of extended substance and that of particular bodies, nor in the end did its originator believe that it could do so; and it does not establish anything but an alleged miracle to mediate between God's creative activity and the causal efficacy of those particular bodies. What it does achieve, however, is the inauguration of a distinction which, though it might have been unwelcome to the author himself, is of the utmost importance in the subsequent development of physical and metaphysical thought. For what emerges clearly from his whole view is that the new physics differs from the old in asking rather how things happen than why they happen. Its aim is to discover the laws of the physical world, and it is not interested in the secret or hidden powers of nature except in so far as they cease to be either secret or hidden and become mere exemplifications of a universal law. Theology, on the other hand, was and must remain interested in the 'why?', and consequently there remains between physics and theology a gap which metaphysics must attempt to fill. Physics investigates how bodies affect one another, but is not required to explain why they should; theology can explain why there is extended substance (God created it) but cannot explain how it becomes differentiated into particular bodies or particles. But in these circumstances to say that God introduced motion as such into extended substance as such is no explanation of anything. Extension as a whole obviously does not move, and to argue that God communicated specific motions to specific parts of extension is simply to beg the whole question and to leave the divergent views as far apart as ever.

Similarly the two-substance metaphysic of mind and body gives no help but is a real hindrance to any solution of the physical problem of how interaction between them takes place. Obviously it does, and Descartes never doubted that it did, but this can be admitted only if we grant a further miracle corresponding to that by which extended substance is differentiated into particular bodies and those bodies are given their initial impetus.

Finally there is the problem of sense perception. The basis of the whole Cartesian position is that mathematics alone can give us genuine knowledge, and that it can do so in virtue of the clearness and distinctness of the notions which it employs and of the necessary relations which subsist between them. But sense-data never possess clearness and distinctness of this order, and if we use them as a basis for demonstration we tend to fall into error. Yet

it has to be admitted that we do and must start from sense-data in our physical inquiries and that even geometry requires some sensuous apprehension as its starting-point. Here again Descartes gives no help to the solution of the problem of how the cognitive faculty which belongs to the self can be brought into connexion with the facts of empirical or *a priori* cognition. Metaphysically he is committed to the view that nothing but what I clearly and distinctly perceive is certainly true, but as an actual scientific investigator he must make use of sense perception. Hence he tends to adopt the view (contrary again to the traditional metaphysic) that all clear and distinct ideas are innate in the mind, that is, are miraculously imparted to it at its creation by God, and that sensibility does no more than furnish the occasion for their becoming explicit. This, too, is unhelpful, though it is interesting to observe that a like distinction between sensibility and understanding had formerly led Plato to a precisely similar declaration of philosophical bankruptcy.

LEIBNIZ

§ I

The position of Leibniz both in physics and in metaphysics is a development of the views of Descartes, though it involves no essential modification of the general Cartesian outlook. Metaphysical speculation is regarded, though not explicitly, as reconciling the method and discoveries of physics with revealed theological truth to their mutual advantage. For Leibniz, like Descartes, was not content to regard physics as a purely hypothetical science concerned merely to demonstrate empirically how things happen: he believed that the more ultimate question why they happen must be both asked and answered if science was to be secure in its possessions.

Hence his physics must be based immediately on metaphysics and ultimately on revelation. It must, however, be admitted that Leibniz in common with all pre-Kantian thinkers frequently failed to draw any clear distinction between physical and metaphysical conceptions and that this failure is extremely detrimental to the intelligibility of his views.

It is clear, however, that his first doubts as to the capacity of either Cartesianism or any form of physical atomism to provide a satisfactory account of reality arose from metaphysical rather

than experimental considerations. Briefly, he was convinced that the physical world must consist of substances, and by substances he meant things which possess an intrinsic and not merely a conventional unity.

Obviously we may choose to regard an army, a heap of stones, or a collection of postage stamps as 'one', but there is at least a good *prima-facie* case for maintaining that such unity as they possess is the product of an arbitrary decision on the part of an observer rather than a characteristic of the things themselves. A particular man or animal seems at least to be a unity in a different and more important sense.

Now if this distinction is borne in mind it becomes clear that neither Cartesianism nor atomism can consistently admit that the physical universe contains or consists of substances; for both are committed to the view that it is essentially spatial. Space, however, has two characteristics which are incompatible with the existence in it of real substances. In the first place it is divisible without limit, and in the second its parts are all completely indifferent to one another. They can be interchanged without the slightest difference being made to the whole. Hence it seems clear that any whole which is spatial must be simply an aggregate or conventional unit, and consequently that Descartes must be mistaken in maintaining both that the physical world is substantial and that its essence is extension; strictly speaking, the phrase *res extensa* involves a contradiction—unless *res* means merely 'what is regarded by custom or convention as one thing'. But Descartes certainly did not mean that.

This *a priori* criticism, however, is emphasized by experimental evidence. For, if the Cartesian theory is correct, it follows that material things, since they have no essential property other than extension, must be wholly inert and immobile. Motion must be introduced into the system entirely *ab extra*, by a miracle, and when it is so introduced, the quantity of it will necessarily remain unchanged. It is essential for Descartes to hold that in a physical system the quantity of motion is constant.

It is easy to show, however, that this assumption is inadequate to give a complete account of the facts, and on purely empirical grounds it is found necessary to maintain that energy, not motion, is what is conserved.¹ Hence, if Descartes's view is to be maintained, the interference of the *deus ex machina* cannot be restricted

¹ Cf. *Leibnizens mathematische Schriften*, Gerhardt, vi, 117 ff.

to the mere introduction of a quantity of motion into an extended mass, but would have to be continuous and complicated in character; and since *miracula non sunt multiplicanda praeter necessitatem*, it is obviously urgent to provide an account of the nature of things which will explain the conservation of energy on rational grounds.

Thus the problem of Leibniz may be formulated in the question: 'What account can we offer of the universe which will avoid (a) the metaphysical, (b) the physical problems to which Cartesianism gives rise?' His answer lies in the doctrine which he offers of the unit of substance or monad. We have already seen that if this is to be a real and not merely a fictitious unit, it must be conceived as non-spatial, and that if it is to serve as a satisfactory basis for physics it must be conceived as active. The question is whether we *can* conceive anything which satisfies these conditions, and the answer is at once given if we turn for a moment away from the physical universe and consider the character of the self. For here we have at once an entity not extended in space (though admittedly connected somehow with a body which is), and active both in thinking and willing. It may therefore be profitable to consider the possibility of conceiving the whole universe, not as a mass of extended inert matter, but as consisting wholly of substances analogous to what we call our selves.

At this point, however, caution is necessary. It might be supposed that what Leibniz wanted to do was to improve the Cartesian system simply by eliminating *res extensa* and filling the universe entirely with *res cogitantes*. This is partly true, but it should be noticed that the monads of Leibniz differ from the selves of Descartes in a vital respect. They are active indeed, but not wholly active. In fact what is suggested is that the Cartesian view is vitiated by a double error. It maintains on the one hand that matter is bare extension and therefore wholly inactive, and on the other that mind is pure thought and therefore wholly active. From this arises the complete dualism of the two substances and the enigmatic position of sense perception which cannot properly belong to either. As against this, what Leibniz wishes to maintain is that the self is indeed active in thinking and willing, but only in so far as its thought is clear and distinct. Confused thought, and the willing which depends on it, is passivity: and sense perception is confused and obscure thought.

Thus by reflection on the self we are led to suppose that the

monad or substantial unit of which it is to be the type includes both activity and passivity within itself. These are named by Leibniz *entelechy* and *materia prima* respectively, and it is to be observed that neither of them, considered in abstraction from the other, has any real existence. In fact Leibniz's criticism of Descartes's philosophy is that it is based on two abstractions, bare mind and bare extension, instead of on a concrete view of the nature of substance.

But suppose it is granted that instances of monads are to be found in selves, can it plausibly be maintained that the physical universe consists of them and not of things essentially extended?

At this point Leibniz fell a victim to inadequate knowledge of facts, and his mistake certainly adds to the initial plausibility of his view, though the discovery of it does not actually refute him. He certainly believed that any particle of matter, however minute, could be found to contain microscopic organisms and that therefore the belief of the plain man in the existence of completely inorganic matter was a mere mistake, due simply to confused perception. This view, however, though it lends colour to the suggestion that the physical universe may consist of entities analogous to selves, does not by any means escape difficulty, for even microbes occupy space and therefore are not strictly monadic in character. Hence a further complication must be introduced.

The monad consists of *entelechy* and *materia prima*. It is non-spatial and must therefore be regarded as an object of thought. It cannot be imagined. Some account, however, must be offered of the bodies which we do perceive by sense and imagination, and to do this Leibniz introduces the notion of *materia secunda*. What this involves may be best understood by further reference to the Leibnizian doctrine of the self, and to the two distinct senses in which he holds that the soul may be said to 'have a body'. The first of these has already been mentioned. Strictly speaking I am a simple substance differentiated into *entelechy* and *materia prima*, activity and passivity; but this monad, which is myself, is related in a specially intimate way to what is called my body, and it is this body which is a physical object subject to physical laws. But we have already seen that this body properly considered is not bare *res extensa*. If it were, it would be a mere aggregate; a false abstraction indistinguishable from *materia prima*. It must rather be held to consist of an infinite number of minute living things each of which on investigation will be revealed as a monad

(*entelechy* and *materia prima*) related to a body. Body is thus simply the unanalysed residuum of our perception. It is called *materia secunda*, and, in the last analysis, it is an abstraction. More accurately it is what Leibniz calls phenomenon or appearance; not mere illusion, but rather reality confusedly perceived (*phenomenon bene fundatum*).

Hence Leibniz's complete account of an individual man runs somewhat as follows:

- (1) Inasmuch as he is an actual and not merely a conventional unit, he must be conceived as a monad.
- (2) This monad is related to an infinite number of other monads which it 'dominates' and which together make up the physical body.
- (3) The relation of dominant and subordinate may occur over again among the monads constituting the body, since it does so by definition wherever we have a genuine unity or whole which is not merely an aggregate.

§ 2

On the face of it, this view gives rise to two fundamental questions. In the first place, we are told that the essence of monads is not extension but activity. But of what kind is the activity? Evidently it cannot be conceived as energy in the physical sense, since this necessarily involves the characteristics of velocity and mass which cannot be attributed to monad as such at all. Secondly, in view of this criticism, how can Leibniz hold that his theory is capable of developing or contributing to the physical theory of Cartesianism at all? It certainly seems that, as metaphysics, his doctrine avoids the Cartesian dualism of mind and matter by maintaining that both are in the end false abstractions, and that both are involved in any actual substance; but if this is achieved only at the expense of making all physical speculation barren, it might fairly be held that he was merely a reactionary attempting to smuggle back into philosophy under a new terminology the substantial forms of the Schoolmen which Descartes claimed to have disposed of for ever in the interest of clear and distinct thinking.

Further, it may be argued that, metaphysically considered, the Leibnizian position is far from satisfactory, since no account has yet been given, except in highly metaphorical terms, of the relations which hold between monads themselves; for 'dominance'

and 'subordination' are unhelpful and in any case tell us nothing of the way in which selves are related (*a*) to one another, (*b*) to those monadic or aggregational wholes which are not strictly selves, and which are generally called animals and physical things.

Obviously the character of the monad requires further elucidation if it is to be a satisfactory basis for either physical or metaphysical theory, and this elucidation is most easily understood if it is first approached from the physical side.

We have seen that, according to Leibniz, all actual physical things are constituted solely of monads, and these monads, though infinite in number, could never fill the smallest space since they are by definition non-spatial. Furthermore, we know that physical things are not merely spatial since physical science is constrained to regard them as somehow active or possessed of energy. One is therefore tempted to suppose Leibniz to have maintained that the energy of physical things arises from the presence in them of monads in the sense in which currants are present in a cake or fish in a pond. This, however, is mistaken even though Leibniz himself sometimes used language which is capable of such an interpretation, for it is obvious that from this point of view monads must be the foundation of bodies and not elements in them.¹ Bodies are *phaenomena bene fundata*, and the monadic structure of the real world provides only the metaphysical basis of the physical or mechanical laws in accordance with which all phenomena must be explained. All physical laws involve space, time, substance, and causality; but all these are, for Leibniz, relations involving sense or imagination. No world which includes them can be real as such or in itself, but they may well be actual characteristics of a real world obscurely or imperfectly apprehended. These relations cannot hold between genuine substances, but are not therefore to be relegated to a world of mere illusion. They are valid, in fact, of phenomena, and phenomena are grounded in monads.

Now it is clear that if this is to be more than a pious hope, some account must be given of the relations between monads to which relations between phenomena correspond or which they obscurely represent, and also some explanation of the notion of correspondence or representation. To take the second point first, it can hardly be questioned that 'representation' is in the end the fundamental conception of the Leibnizian philosophy, though opinions differ as to whether we should regard the introduction of it as a

¹ Leibniz, *Metaphysische Abhandlung*, 1686, § 18.

stroke of genius or a philosophical disaster. As it is a conception common to Leibniz and his successors, including especially Kant, it is examined more thoroughly at a later stage and no more than a general indication of its meaning is given at this point. It is however, essential to recognize from the outset that a representation is not conceived as a simple copy or mirror-image of its original. There is, however, a discoverable and point-for-point relation between what is represented and the representation of it. Thus on an empirical level, a curve would be said to represent the equation which it expresses and more obviously the impression of a seal on a piece of wax would be a representation of the seal. An important aspect of the doctrine and one which perhaps historically was responsible for the Leibnizian concentration on it is its bearing on causality, for if, in accordance with the scholastic view, there can be nothing in the effect which was not previously in the cause, any effect can properly be regarded as the representation of its cause. It was most important for Leibniz to maintain that this was a permissible mode of expression.

§ 3

The application of this view both on the empirical and on the metaphysical level must now be considered. Empirically Leibniz maintains that every physical particle can be held to represent the whole universe from a particular point of view, and it is obvious that he must hold this as soon as his terminology is understood. For since the material universe consists of particles endowed with energy and in thorough-going causal connexion with one another, no change can occur in any of them without the whole being, however slightly, altered thereby, and this in Leibnizian language is simply to maintain that every other particle, in so far as it is affected by the alteration of the first, represents in itself the body which has caused that alteration. Now the empirical world as a whole represents the metaphysical world as a whole, but here a difficulty arises. For monads are conceived as substances on strict Cartesian lines. Each of them is entirely self-supporting and possessed of a determinate essence of its own (it is in fact simply a unit of *vis viva*). Substances, however, cannot interact with one another at all, for by so doing they would lose their substantial independence, and yet Leibniz is convinced that every monad must be held to represent the metaphysical world of monads just as every particle represents the physical world of

particles. Clearly a miracle is called for, and it is duly forthcoming. There is in fact no interaction between monads, we learn. They really have no windows, but each of them simply unfolds in accordance with its own internal necessity. God, however, in the act of creating them ensured that these unfoldings should be harmonious and consistent with one another. Hence every one *de facto* does represent the whole universe of them, but this representation is to be attributed not to any interaction but to the divinely pre-established harmony.

From this it follows that space, time, and causality cannot be conditions of monads themselves, but only of the physical particles which are representations of them: space is in monads, not monads in space. The explanation, or at least what Leibniz believed to be the explanation, of this paradox is contained in his conception of the nature of the self. Here again, as in respect of the ultimate metaphysical nature of the material world, he is led to a considerable divergence from the Cartesian point of view, though he agrees with it on the central point that the soul must be conceived as a substance. It is not, however, to be thought of as wholly different in kind from the monads which are the basis of physical things, but rather as connected with them by a series of infinite gradations.¹

The monad which is the self in fact represents the universe just as any other monad does, but we must realize that monads throughout the universe are distinguishable from one another simply by their degree of representing capacity. The lowest order (that of inorganic nature) has a very confused and obscure representational capacity, but as we rise higher in the scale we eventually reach the levels of conscious representation (perception) and pure self-conscious thought (apperception). Thus within ourselves we can discover an infinite range of representations varying from the extreme confusion and obscurity of mere sensation to the absolute clearness and distinctness of pure intellectual activity.

Now space, time, and causality clearly belong to our sensuous awareness of things, and therefore must be regarded as occurring at a relatively obscure level of perception. A divine intelligence which apprehended monads as monads would represent them with absolute clarity as distinct substantial entities and therefore as neither spatial, temporal, nor causal in character.

¹ There is a close connexion between Leibniz's philosophical position and his mathematical investigations, especially into the differential calculus.

§ 4

The weakness of the Cartesian system as a whole lay in its total inability to reconcile the substantial or independent existence of a plurality of observable phenomena with their undeniable inter-relatedness to one another. The solution of Leibniz lies in his acceptance of relations between phenomena as a fact. From this he draws two momentous conclusions, namely that the objects of the senses, just because they are really related, cannot in the end be regarded as real, and that the ultimately real is therefore accessible not to sensibility but to understanding. This suggests a distinction between the intelligible and sensible worlds such as Kant later drew in his *Inaugural Dissertation*, but this was not the line which Leibniz followed. As we have seen, he chose to regard the transition from sense to understanding as a continuous one involving only an infinite number of degrees of clearness in representation, thereby apparently bridging another of the gaps in the system of Descartes, for whom thought and sense had necessarily been different in kind and not merely in degree.

But even if this procedure is allowed to be sound in principle it can hardly be denied that the problem of substantial interrelation is shelved by it rather than solved, since the conception of a universe of monads, each entirely self-subsistent and all bound together by nothing but the pre-established harmony ordained by God's creative act is, to say the least of it, extremely difficult to accept. This, however, is neither the only difficulty nor the most serious which the view involves, for when carefully considered it is found inevitably to cast a doubt on the central contention on which the whole of the new philosophy of nature rests, namely the doctrine that the material universe is real and is through and through intelligible on mathematical principles. For if space, time, and causality are all relational forms valid only of obscure perceptions and bound to dissolve away with the coming of true intellectual insight into the nature of the real, we are bound to ask in what sense geometry and physics can be regarded as giving us knowledge of the real at all; but the idea that geometry and physics are not strictly valid of reality was essentially incompatible with the whole outlook of seventeenth-century philosophy, and Leibniz himself naturally draws no attention to this aspect of his doctrine. Another acute problem of the same general character arises in respect of causality, in that the interaction of physical

particles with one another is, like the space in which it happens, appearance only. To say that these are all *phaenomena bene fundata*, as Leibniz tends to do, is really no answer but a mere evasion, and ultimately he is bound to face the question 'Why, strictly speaking, does anything happen at all?'

It is at this point that Leibniz's theory of logic is invoked to bear out his physical and metaphysical views. As a physicist he considers that the total effect is necessarily identical with the total cause and that within the physical universe energy is always conserved. This in itself is a purely physical notion and is a natural consequence of his substitution of energy for motion in the Cartesian doctrine of conservation.¹ The consequence of it, however, is that, physically speaking, when once we know the effect we can discover the cause simply by a process of analysis, since in the end they are identical with one another. This physical identity between effect and cause can lead us to the ultimate metaphysical (or rather logical) notion on which it depends or which it represents. In logical inference as in physical causation we are dealing with a process of necessary connexion in which a consequent is held to follow from certain antecedent conditions, and here again we may take it that the consequent and the antecedent are in the end identical with one another. Hence he maintains that in every true proposition *praedicatum inest subjecto*², the predicate is contained in the subject, and that consequently all valid inference is explicitly analytical in character and involves simply the discovery of what is actually contained in the original subject. On these principles it follows that the supreme principle of all valid thinking is the principle of identity, and it should be found that the whole universe can be deduced analytically from the notion of substance. This is the view which Spinoza had actually attempted to develop without any very notable success. Leibniz, however, was no Spinozist, and attempted a less heroic and more complex solution. Realizing that the principle of identity in itself is inadequate to account for the concrete diversity either of the universe of substantial monads or of the physical universe which represents it, he simply introduces a second metaphysical principle, namely that of sufficient reason to produce that diversity. Identity, he argues, is necessarily the criterion of possibility, since that which involves contradiction cannot be real. But of the infinite number of possible universes of which this principle would admit one and one

¹ Leibniz, op. cit., § 17.

² Leibniz, op. cit., § 8.

only is actual. God, we must suppose, elected to actualize this of all the possibles for the sufficient reason that it was the best of them all. Thus the diversity of the monadic world depends on God's will: its logical coherence on His intellect. The 'why' of the real world is solved by a miraculous intervention, but the solution of it has an important repercussion in the phenomenal sphere. For the real world is now not conceived as merely mechanical but also as essentially purposive in character. Its function is to realize the maximum of good, and it was actually created in preference to all other possible universes in order that the maximum amount of good might thereby be realized.

Hence even in the phenomenal world we shall be mistaken if we look only for efficient causes. Our account will be true, but it will be incomplete, since the phenomenal world represents, however obscurely, the essentially purposive character of the real monadic universe. Thus another of Descartes's cherished beliefs is thrown overboard, for final causes together with occult qualities and substantial forms were elements in scholasticism which he hoped that his new view had finally eliminated.

Yet even these weighty concessions are inadequate to cover the gulf between physics and revelation which Cartesianism had opened. For at the end the problem remains, and even the helpful notion of representation can do no more than conceal it temporarily; 'How can we effect a transition from the particular laws which physics formulates to the real universe intelligible to pure reason?' The existence of this as a problem is ultimately concealed from Leibniz by the fatal facility with which he transfers himself from the world of physics to that of monads without observing that he has done so; in fact the term 'monad' is a snare to him in much the same way as terms like 'complex' and 'repression', which have both a physical and a psychical meaning, are to the modern psycho-analyst.

This, however, though it is, as Kant was ultimately to demonstrate, the true problem with which the Cartesian philosophy and its successors are faced, is not the point of the Leibnizian system which his immediate followers in Germany found most difficult; indeed they never noticed its existence. As we shall see, they were rather concerned with the obvious theological problems to which the notion of substantial monads in a pre-established harmony necessarily gives rise.

LOCKE

§ 1

It is somewhat unfortunate for Locke's reputation as a philosopher that he is frequently thought of as part of a kind of apostolic succession which begins hopefully with Descartes and ends triumphantly with Kant. It is thereby suggested that his aim was similar to if not identical with that of Leibniz and Spinoza, and it soon becomes obvious that, in so far as it was, he notably failed to achieve it. This is to judge him in entirely the wrong light. He was acquainted with the views of Descartes and of the Cartesians, and appears to have studied at any rate the *Meditations* and the *Discourse* with some care;¹ but he certainly did not regard himself as in any way carrying on or completing the metaphysical theories which Descartes had initiated.² On the contrary, his purpose was as far as possible to avoid metaphysical complications (which he thought were rather tedious and a waste of time) and confine himself to more practical investigations into the origin and extent of human knowledge. In the nature of the case it was not possible for him to carry out this purpose without straying into metaphysics, and he seems to have recognized very imperfectly the extent to which his theory of knowledge entailed a metaphysical doctrine: nevertheless he is entitled to be judged mainly by his success or failure in what he was explicitly attempting rather than by his unwilling intrusions into a sphere which did not interest him. All that can usefully be maintained as to the connexion between Descartes and Locke is that they are often found to be in the same area of thought, but that, when this happens, it is to be attributed to accident rather than design, since their philosophical problems and methods have no intrinsic connexions with one another. Locke takes for granted in principle practically the whole of what Descartes believed himself to have established as to the general character of the external world, and is interested simply in the question how we come to know that world, assuming that it is really there to be known. He admits indeed the bare possibility of its non-existence, but regards this doubt as purely academic and of no philosophical importance. Similarly he accepts quite uncritically (as Descartes himself had done) the traditional metaphysic of substance, essence, and mode, though he raises important difficulties as to what items in the real world should properly be

¹ Gibson, *Locke's Theory of Knowledge*, p. 184.

² Op. cit., p. 205.

classed under these headings ; and much of the incompleteness and obscurity of his position is attributable to the fact that those categories, in the form in which he accepted them, were themselves unsuitable and inadequate for his purpose.

As contrasted with Descartes, Locke is interested in maintaining two fundamental logical truths. The first is that we have genuine knowledge only of relations, never of things themselves or substances: the second is that analytical propositions are always 'trivial' whereas synthetic propositions are 'instructive'.

His position is most easily understood if we regard him as inspecting the world from outside as God or an angel might do. He seems to take it for granted that a being so situated would observe a mechanical system of minute physical particles moving in accordance with determinate laws and imparting motion to one another by impact, though they possess no active power of initiating motion themselves. He was not particularly interested in this part of the processes of nature, since his own scientific interests were almost wholly confined to medical and biological studies. He believed further that the material particles which by their combinations make up the physical world would be seen by a competent supernatural observer to have a capacity of cohering with one another so as to form macroscopic 'bodies', but that to the human mind the nature of this power was wholly inexplicable. There were also in the universe minds or selves which, though immaterial, were nevertheless in spatial relations to one another, and were also closely connected with bodies, but this union, too, was unintelligible to us, though it might and presumably would not be so to an intelligence of a sufficiently higher order of penetration.

Taking all this incuriously for granted, as he was perfectly entitled to do, the question which he put to himself was roughly as follows. Granted that the universe, seen from outside, is like that, how do we, who are situated inside it, come to know that it is? His aim is thus primarily psychological, and he desired to be what Kant subsequently asserted that he was, the physiologist of the human understanding.¹

§ 2

Locke's method of attack is simple and straightforward. He is convinced on empirical grounds that the mind can have no content before it which can be the object of its thinking activity unless

¹ A ix.

that content is conveyed to it by the senses. Hence it cannot have, as the Cartesians had generally supposed, innate ideas in the sense of intelligible contents, implicitly present in it from birth, which can become explicit on the occasion of a sensible stimulus: *a fortiori* no such ideas can be available for contemplation without any such stimulus. This precludes any answer to his main question on Cartesian lines. On the other hand, the mind is in possession of an innate or natural capacity for acquiring knowledge by means of the contents, or ideas, which come to it through the senses, and it is precisely that capacity which Locke proposes to investigate.

These ideas of sense fall into two classes. Some of them are presented to the mind as a result of the operation of the minute particles of matter on the sense organs of the body; others as a consequence of the mind's introspective attention to its own operations. This distinction between 'sensation' and 'reflection' is implicit in the distinction between thinking and extended substance, and is the natural assumption of all philosophies which set out from that position. As regards the second class, the data of inward sense, Locke is not really much interested in them, since at first sight they have nothing to do with the problem of how we come to know the real world. The first class, which is for him more immediately important, is subdivided into ideas of primary qualities on the one hand and secondary qualities on the other. The former are ideas of the mathematical properties (solidity, motion, &c.) and are held to be actual resemblances of the things which cause them; the latter (colour, &c.) are also the effects of the operation of things on the senses, but bear no resemblance to their causes.

Now when we consider the essentially dependent character of these qualities we are led to posit the existence of substances, material and immaterial, in which they inhere, or which support them, but of these substances themselves we have only a very confused and inadequate idea. They can be known only as 'something, I know not what' whose sole function discoverable by us is just a capacity to be qualified by the primary and secondary qualities whose ideas we do apprehend.

Consideration of the contents of our consciousness next shows us that we apprehend immediately not merely simple ideas of the qualities of substance but also modes, or combinations of those simples, so that our idea of a piece of gold contains in it the simple ideas yellow, hard, &c.; and in addition to this we find in ourselves

a faculty of combining ideas into modes spontaneously, so that we can frame to ourselves the idea of a chimera even though no such complex of simple ideas has ever been presented to us by sense. Finally the mind is found to have a power of abstracting which enables it to form general ideas from either simple ideas or ideas of modes.

This completes the catalogue of the kinds of furniture which are constantly being conveyed by the senses into the empty room of the mind's consciousness. Locke has next to consider the uses to which the mind can put them when they arrive. Knowledge, he holds, is nothing more than the discovery of the connexion or repugnancy of our ideas with one another, and such union or incompatibility is discovered immediately by an unanalysable act of intuitive inspection. The existence and infallibility of this intuitive certainty can no more be questioned than can the existence of ideas themselves or of the self which has them; and Locke had little patience with sceptics who questioned it or metaphysicians who attempted to derive it from more ultimate general principles.

Starting from this fundamental assumption, he had no difficulty in demonstrating that we can have knowledge in respect of our general ideas. For these are entirely our own creations and we know exactly what is included in them. I can have no doubt as to what ideas are necessarily implied by or excluded from my idea of a chimera since I myself have defined a chimera as possessing certain specific characteristics, and have therefore only to attend to my own definition in order to know whether a further determination follows from it or is repugnant to it. Such knowledge, however, though in some cases it is not merely certain but extremely valuable, does not necessarily apply to real existences. We can be certain that it does so only in cases where the definition or nominal essence is identical with the actual construction of the thing, that is with its real essence, as in geometry. Locke's most fundamental contention is that we can in fact achieve such certainty in respect of modes, but never in respect of substances. Thus, if I choose to define gold as hard, yellow, malleable, and soluble in *aqua regia*, I can know what further ideas are implied in my idea and what are excluded by it, and this enables me to say whether the particular piece of matter which I am considering falls under my general idea of gold or not. But to achieve knowledge of the internal structure of this piece of matter itself would involve a knowledge not of nominal but of real essence, and that I am totally unable to achieve.

Even if I were endowed with superhuman powers of observation and could actually see the movements of these insensible particles which are the real piece of matter (as distinct from my present inadequate idea of it), I should not be much farther on, for I should know only the 'how' of nature, not the 'why'. I should perceive that, as a matter of fact, a piece of matter constituted in a certain way has a certain effect on a body constituted as mine is; but I should still not know the reason why it produced that effect rather than a different one, since no repugnancy of ideas would be involved in the latter supposition.

This is unquestionably a serious limitation to the extent of our knowledge, but, as Locke holds, it is of no great practical importance since we are able to know all that is necessary for our ultimate salvation. For this inevitable ignorance as to the nature and even, for the avowed sceptic, as to the existence of substance is qualified at two vital points. We possess an intuitive certainty of our own existence and a demonstrative knowledge of the existence of God, though it must be conceded naturally that we have no clear idea of either His essence or our own. This would indeed be fatal if knowledge presupposed, as the Cartesians imagined, the existence in us of clear and distinct ideas of substances and their real essences, but Locke believes himself to have demonstrated that no such presupposition is required in order to account for the kind of knowledge which we possess. For to him it is certain that we can apprehend necessary connexions between our ideas even in cases where the ideas related are not adequately known to us.

§ 3

Locke's new way of ideas constitutes an innovation in philosophy different in character though comparable in importance to the Cartesian introduction of mathematical principles of reasoning. What he asserts is in effect that knowledge ought not simply to be taken for granted, but that a serious philosopher should conduct an investigation, largely psychological in character, into the way in which it comes about, with a view to determining its nature and extent.

He is a critical philosopher, neither dogmatic nor sceptical, and his influence on the course of philosophical thinking both in logic and morals cannot be overestimated. Although his direct influence on Kant was probably not considerable, the whole empirical

school in Germany culminating in Tetens¹ derived its views directly from him.

In spite of his wide divergence from Descartes in many important respects, it is useful to consider the affinities as well as the disagreements of the two, since we can thereby set Locke's position in a clearer light. We have already seen that he accepted without question the general categorical scheme of substance, essence, and mode which Descartes himself had taken over from his predecessors. It is, however, noticeable that Locke is by no means consistent in his application of it. Sometimes it seems as if the real essence, for example, of a piece of gold simply is the number, texture, and motion of its insensible parts; while at others (more consistently with his general view) it is found in the 'something, I know not what', or substance which is numerable, figured, and mobile. Either doctrine is reconcilable with his undoubted view that the piece of gold has a real essence whose nature we are incompetent to discover, though in the former case the incompetence would really depend only on the inadequacy of our perceptual mechanism, whereas in the latter it would be inherent in the nature of things.

Locke agrees with Descartes in holding that substantial forms can be of no service whatever towards an account of real essences, but he does so for an entirely different reason. Descartes had maintained that substantial forms, because they were capable of immediate apprehension by sense, could not serve as a basis for mathematical calculations about the nature of the real, whereas it was their non-empirical character which rendered them objectionable to Locke. To admit substantial forms of which we can have knowledge would be, as he quite correctly observed, to credit ourselves with an *a priori* cognition of real essences which was precisely what he held that we never do and never can obtain. It is really in support of this contention that he rejects even the Cartesian substitute for substantial forms, namely innate ideas. As we have seen, he actually restricts knowledge to the intuitive apprehension of connexions and repugnances between ideas, whether the latter are received through the senses or framed by the mind for itself, and consequently he is committed to the view that all our knowledge is on a single level. In that it all depends on the exertion of a power of apprehending inherent in the mind we can maintain, if we want to, that the whole of it is innate; but

¹ See below, pp. 154 ff.

since the mind cannot from its own resources produce ideas (except by composition of those which it has already received from the senses), Locke prefers to say that none of it is.

And so in the last resort the existence of material things independent of the mind must be allowed to admit of nothing more than an empirical proof, and this, although it can give us an infinitely great degree of probability, is still not in the strictest sense demonstrative. As contrasted with this we have the intuitive awareness of the existence of ourselves which enables us in the strict sense to demonstrate the existence of God. But although on this point Locke is to some extent in agreement with Descartes in that both believed that the existence of myself is more certain than the existence of material things (though Descartes believed that, granted God's existence, His veracity would provide us with a true demonstration of those things), Locke continues to maintain that the true nature of God, the self, and material things can never be discovered by us.

HUME

§ I

Hume sets out with the same general assumptions as Locke as to the existence of a material world and the physiological origin of our sense experience of independent objects, but as he rejects Locke's rationalist procedure in respect of substance and cause, he comes ultimately to doubt the admissibility of these assumptions and to maintain a completely sceptical attitude towards the possibility of our gaining any rational certainty concerning 'matters of fact and real existences'. Locke had believed without question that the existence of qualities was in itself an adequate ground for presuming the existence of a substance to which those qualities belonged: and that the occurrence of anything was in itself a proof of the existence of something else of an unspecified character on which it followed necessarily as an effect. What Hume does is to restate Locke's doctrine of ideas in such a way as to rob both these beliefs of their plausibility.

Actually he concentrates his attention mainly on the second of them, and, in the *Enquiry* more than in the *Treatise*, takes as his main theme the problem of how we can claim to apprehend any necessary connexion between events which are temporally related, that is, the problem of the validity of the causal axiom. But in

spite of this, Kant was probably mistaken in supposing that Hume had failed to grasp the possibility of generalizing his scepticism concerning the truth of this axiom so as to cover the whole problem of our knowledge of necessary connexions between matters of fact. It seems more likely that the failure of the *Treatise* (which Kant had not read and which is sceptical over a much wider front than the *Enquiry*) led Hume to hope for better success if he directed his attention to a single major issue.

His development from Locke is to be found in his attempt to analyse further Locke's term 'idea', and in the conclusions which follow necessarily from his restatement of it.

Locke's use had been extremely wide, covering as it did any psychical event of which the mind is conscious, so that the data of sense, memory, imagination, and thought are all indifferently described as 'ideas present to the mind'.

Hume, on the contrary, opens by drawing a sharp distinction between ideas properly so called and impressions. The latter, which are for him the only genuine data which the mind has to work upon, are simply the immediate apprehensions of inner or outer sense, pains, colours, sounds, &c. Corresponding to these are ideas, which are quite literally faint copies of them which the mind preserves and makes use of in memory, imagination, and reasoning. Thus all simple ideas must somehow be reduced to copies of impressions, and complex ideas are considered as nothing but aggregates of simple ideas which may or may not have been copied from complex impressions, since Hume agrees with Locke in granting the mind a power to frame complex ideas to which no actual impression corresponds.

Such a view involves a limitation of our knowledge far more drastic than Locke had contemplated or would have accepted had it been proposed to him, as appears when we consider its bearing on the question of relations. Locke had gone no further than to maintain that our ideas of these must be founded on or traceable to the simple ideas of sense, whereas Hume, demanding as he does that ideas should be admitted as legitimate only when they can produce a birth certificate showing from what impression they have been derived, is automatically limited to the relations of resemblance, contrariety, and spatial arrangement. His very formulation makes it impossible to give any but a sceptical answer to his own question, since the phrase 'impression of necessary connexion' is not merely meaningless but self-contradictory.

An impression is by definition just a *de facto* occurrence to which the idea of necessity (except as regards its origin, which is not here in question) is, in Locke's terminology, repugnant.

Clearly, then, Hume is badly placed for explaining how we come even to suspect the existence of any world independent of our own fleeting sense-data, or any continuous self to apprehend those data. He cannot appeal, as Locke had done, to the notion of substance to help him out, for substance is easily seen to be an illegitimate idea, which cannot offer any impression from which it is copied to support its claim to be entertained. Nor does causality, to which he might have appealed as Berkeley did, to save him from complete subjectivism, fare any better. Hume quickly disposes of Locke's attempt to derive it from the impression of power or effort in myself, and the possibility of a rationalist proof, which Locke had also accepted, is shown to have no more validity here than in the case of substance. It might therefore be anticipated that nothing could emerge from Hume's initial assumption but a completely sceptical and subjectivist conclusion in which nothing could be accepted but a temporal stream of events in which no order, necessity, or objectivity could ever be discovered.

Against this conclusion Hume has two lines of defence. He first develops the doctrine of the association of ideas which Locke had already introduced. On the strength of this he avoids doubting that the future will resemble the past, although if pressed he can offer no better ground for our expectation that it will do so than 'a kind of pre-established harmony'. By this, however, he must not be held to mean anything so profound as Leibniz had previously done. Hume's view is that we find out by simple introspection sufficient of the working of our minds to realize that when a given impression (fire) has been followed in a past by another impression (heat) the recurrence of the former will in fact be followed by a 'lively idea' or expectation of the latter; and this expectation will be strengthened proportionately to the frequency of the recurrence and the absence of contrary instances. Assuming, then, that there really is regularity in nature, we shall in fact be justified in our expectations, provided that we classify our impressions with appropriate care, and the result will be precisely as if we genuinely apprehended that regularity in terms of necessary connexion which in fact we are wholly incompetent to do. It is therefore not exactly true to say that Hume reduces causality to subjective expectation.

What he does is rather to postulate causality, deny that we can

have knowledge of it, and offer as a reasonably efficient substitute for such knowledge our admitted tendency to expect regularity in nature. Of course if we could know that such a regularity or affinity of phenomena is actual our causal inferences would rest, as in his view they do not, on reason instead of on custom or habit.

To account for our belief in the existence of an independent world he advances, in addition to the association theory, an original and highly ingenious doctrine of imagination¹ which has much in common with Kant's subjective deduction of the categories.

§ 2

Hume's advance on Locke may now be summarily stated. His chief contribution, and it was entirely original and completely justified, was to draw attention to the absolute necessity for some proof of the legitimacy of the categories of substance and cause. As we have seen, Descartes, Leibniz, and Locke, widely as they disagreed on many points, agreed that reality must consist of substances characterized by essences differentiated into modes, and must somehow contain causal relations within itself. Hume does not actually deny that this may be the case, but he does ask what grounds, other than habit, we have for saying that it must be so. He is in fact the first philosopher to raise explicitly the question 'How can knowledge of real existence be reached by pure reason alone?' and to point out that the assumption of the applicability of the category of cause in particular to real existence without any proof involves the begging of this vital question. In pursuance of this line of thought he discriminates more sharply than Locke had done between propositions which assert merely necessary connexions between ideas (including those of proportion, quantity, and number) and those which claim to penetrate further into matters of fact. The former he allows to pass unchallenged, though he should properly have asked whether anything but tautological or trivial propositions could really be discovered by the use of them. Had he done so, as Kant noted,² he must have concluded that geometry was in as precarious a position as the causal axiom. In fact he did sometimes, though by no means always or in his maturer work, hold that it was, but for a different reason. But as regards real existence, he entirely disowned Locke's admittedly

¹ Hume, *Treatise*, bk. i, § 6.

² B 20.

limited and tentative claims to discover necessary connexions in it by means of ideas.

His great merit is that he makes evident once and for all the danger of extreme subjectivism to which any consistent empiricism is necessarily exposed. This is what Kant derived from Hume and what instigated him to attempt a systematic deduction of those fundamental categories which are so involved in all our thinking that we hardly are conscious of the ontological presuppositions which they involve.

CONCLUSION

'You profess to be writing a book about Kant's *Critique of Pure Reason*', the reader may protest at this point. 'I admit that in order to do this you may find it necessary to say something about his pre-Critical philosophy and even mention briefly the work of some of his contemporaries. But surely all this preliminary account of the well-known views of pre-Kantian philosophers is going a great deal too far. What you say about them may be true, but it has nothing to do with the matter in hand.' Although this criticism is superficially justified, I believe that it completely misses the main point. The views of the philosophers whom I have considered were not just propounded and then forgotten about, nor were they, like those of Spinoza and Berkeley, in the nature of philosophical oddities. They remained as an important part of the whole context of European civilization by which Kant's own thought was moulded. He might never have studied the works of Locke and Descartes in detail, but he could no more have avoided their influence than a modern writer can avoid the influence of Freud and Einstein.

But the point which I wish most to emphasize by thus restating these views is their virtual unanimity as to the general nature of the physical universe and of man's perceptual acquaintance with it. The authors indeed differed as to the extent of our knowledge, and that difference depended mainly on the amount of *a priori* insight into the nature of reality which they were prepared to admit: they differed, too, as to the questions to which they believed that philosophy ought to look for answers. But behind these differences, important as they are, there is a much greater volume of substantial agreement. It is essential to the understanding of Kant to remember that he joined in that agreement. Had he not done so, he would have regarded the fact as of sufficient

importance to require statement and justification. For this reason alone it seems to me historically inadmissible to represent him as either an idealist or a phenomenalist (in any modern sense of that term), even though passages in the *Critique* can be cited in support of such a view. We are almost certain to misinterpret his work if we regard that of his predecessors as pre-Kantian and therefore irrelevant. Their general doctrines are embodied in the *Critique*, not superseded by it. This fact unfortunately makes it necessary to pay considerable attention to the deservedly less known writers whose work formed Kant's more immediate background; and with three of whom in particular, namely Wolff, Baumgarten, and Meier, some acquaintance is practically indispensable as an introduction to his problems.

II LOCAL INFLUENCES

WOLFF (1679-1754)

ALTHOUGH Wolff was certainly not a great philosopher,¹ his rather voluminous works are nothing like as dull as is sometimes supposed. His aim was to systematize and render intelligible the views of Leibniz, and it cannot be denied that up to a point he was immensely successful in doing so: but his greater service lay in making German for the first time a philosophical language. The demand for his works was extremely heavy and led him to republish in Latin with a view, as he says himself, to making them internationally accessible. Admittedly his version of Leibniz is far from being satisfactory, since it leaves out altogether much of what now seems to be of the greatest importance. The distinction between the physical and the metaphysical is for him practically non-existent, and by deriving the principle of ground and consequent from that of contradiction he establishes a hard-and-fast rationalism in respect of the world of nature which Leibniz himself would certainly have rejected. Against this, however, there are two important facts to be remembered. The first is that in the almost complete absence of published works by Leibniz, Wolff's insight into the system which he was expounding must have depended very largely on personal intercourse with its originator: the second, and more important, is that he openly regarded philosophy as being essentially concerned with morals and only secondarily with metaphysics. In this he was in full agreement with the great writers of the German *Aufklärung*, and also to a considerable extent with the view of Kant himself.

It is not necessary to deal further with his doctrines as they are faithfully reproduced except in very minor details by his pupil Baumgarten, from whom Kant seems in the main to have derived them.

BAUMGARTEN (1714-1762)

§ 1

It is unlikely that any philosopher has ever produced a more unutterably tedious work on metaphysics than Baumgarten's

¹ Kant, however, described Wolff as 'the greatest of the dogmatic philosophers'.
B xxxvi.

Metaphysica;¹ or combined so successfully the pedantry of a dying scholasticism with the illusory clearness of a pseudo-geometrical demonstration. Indeed the *Metaphysica* might well be taken as the type of that method of exposition which had made the term 'systematic philosophy' one of abuse in England and France before the opening of the eighteenth century. In spite of its defects, however, it enjoyed considerable success and appears to have been the standard exposition of the Wolff-Leibniz metaphysical position available for the use of university students. The fact that Kant consistently employed it as a text-book is at least an indication that nothing substantially better was available, for, although he was officially bound to use some book as distinct from merely stating his own views, it does not appear that the Prussian authorities cared what particular author he chose to expound. Thus when Kant talks of the dogmatism of his predecessors in metaphysics, it is reasonable to suppose that Baumgarten was the author whom he had primarily in mind. It is fortunately unnecessary to consider Baumgarten's position in detail here, and all that will be attempted is a brief outline of the scope of his work with a rather more detailed account of those parts of it which are of interest as elucidating the relation between Leibniz and Kant. In fairness to the author, however, it must be stated that Baumgarten himself was under no illusions as to his own stature as a philosopher. He regards his own book quite explicitly as an exposition of the Wolff-Leibniz view, and lays no claim to originality in respect of the position which he occupies or the arguments by which it is supported. Actually his position does differ materially from that of Leibniz, but it is doubtful whether Baumgarten knew this or whether he could be blamed for not doing so. The first (very incomplete) collected edition of Leibniz's philosophical works did not appear till 1765, and practically the whole of his writings were till then buried in more or less private correspondence (with Clarke, Bayle, &c.) and in the back numbers of the Leipzig *Acta Eruditorum*. In fact the 'Wolff-Leibniz view' is really Leibniz as interpreted by Wolff, and Baumgarten is a popularization which reduces further the Leibnizian element in it. It is especially noticeable that no hint is to be found in the *Metaphysica* that the position which is being stated has any connexion with either mathematics or experimental physics. All that survives is the inadequate summary contained in the *Monadology*.

¹ Kant considered Baumgarten an admirable analytical thinker. B 35.

§ 2

Baumgarten's *Metaphysica* (1739) consists of exactly one thousand sections, and any doubt as to whether this number is dictated by the nature of the subject or by the author's passion for tidiness is settled by the fact that its subdivisions are also constrained to occupy round numbers of sections. It is written in a kind of Latin and consists of four parts dealing respectively with Ontology, Cosmology, Psychology, and Theology. The first is strictly speaking propaedeutic. It is concerned with those truths which are valid of all reality; whereas the remainder are restricted, at least by implication, to the universe in which we actually exist. This ontological section opens with a number of logical and metaphysical assumptions which, if they are accepted, lead inevitably to Wolff's interpretation of Leibniz's *Monadology*. The only important divergence from Leibniz lies in the explicit reduction of the principle of causality to that of logical implication which begins in § 14¹ and § 21 and is completed in § 307. The ground of anything is that from which we can understand why it is. That which contains the ground of anything is its *principium*: the *principium* of existence is a cause. It is also maintained that nothing but a substance can strictly be a cause (since nothing but substance can ultimately be a ground, for by definition substance alone is intelligible in itself (*in et per se*) and requires nothing beyond itself to explain its nature). The nature or essence of a substance is its internal possibility,² and to this essence existence is superadded as a further determination (*complementum*).³ A unit (*Unum, Eins*) is that whose determinations are inseparable, and a transcendental unit (*wesentlich Eins*) is that whose parts are intrinsically inseparable: consequently anything which possesses existence merely as a mode and not as a determination intrinsic to its essence is contingent.⁴

That which can exist only as a determination of something else is not a substance but an accident; and accidents which appear to be independent existences are *phaenomena substantiata*.⁵

Now there must be some ground for the inherence of accidents in a substance, and this ground is defined as force (*vis*): but force

¹ Meier's *Vernunftlehre* and Baumgarten's *Metaphysica* are reprinted in Ak. vols. xv, xvi, and xvii.

² § 40.

³ § 55.

⁴ § 134.

⁵ § 193.

itself cannot be an accident (since it is the ground of their inherence), therefore it must be the substance itself.¹ In other words, substance must itself be regarded as the ground of the inherence of accidents in itself, and in so far as force is loosely ascribed to entities which are in fact accidents, this is only in so far as those accidents are regarded as *phaenomena substantiata*.² Now change is an accident which inheres in particular substances; therefore it must be grounded either in the substance in which it occurs or in some other substance. If it is the former, the substance is said to be active, if the latter, passive.³

This argument leads to the distinction which is vital to the whole of Baumgarten's position, namely that between *influxus realis* and *influxus idealis*. 'Si passio illius substantiae, in quam altera influit, simul est ipsius actio, passio et influxus dicuntur ideales. Si vero passio non est patientis actio, passio et influxus dicuntur reales.'⁴ This enables him immediately to distinguish between spontaneity and receptivity, the former being *facultas* (*potentia activa*, *Vermögen*) and the latter *potentia passiva* (*Fähigkeit*, *Empfänglichkeit*) from which is derived the definition of *vis viva* (*lebendige Kraft*) and *vis mortua* (*todte Kraft*). 'Granted the existence of a faculty and a capacity, action and passion do not necessarily occur. But they do occur if we also grant the existence of force as the determination (*complementum*) of the faculty to action, i.e. that which is added to the faculty to produce action. Thus a specific amount of existent force either is or is not sufficient to produce a given action: the former is a living, the latter a dead stimulation to action.'⁵

At this point Baumgarten leaves the notions of force and action to be taken up again later, and proceeds to an account of monads or simple substances.⁶ Here he merely repeats the doctrine of the *Monadology*. Monads are simple, and therefore no composites are strictly substances but only *phaenomena substantiata*. Hence no individual monad can occupy space, though a whole which consists of monads (*totum monadum*) which is, of course, a composite and therefore really a *phaenomenon substantiatum*, can do so. Furthermore, such a *substantiatum* is conceived as exercising force (though only in the loose sense before considered) either in producing motion in other substantiata (*vis motrix*) or in resisting such motion (*vis inertiae*). Any extended thing (*substantiatum*) which possesses *vis inertiae* alone, i.e. which is purely passive, is *materia*

¹ § 198.² § 201.³ § 210.⁴ § 212.⁵ § 220.⁶ §§ 230-42.

prima: one which possesses also *vis motrix* is a physical body (*materia secunda*).¹

The ontological section closes with an account of cause of which the fundamental point, namely the identification of cause with ground, has already been mentioned. It is further developed by the statements that any effect is qualitatively like and quantitatively identical with its cause.²

§ 3

The Cosmological section which follows is really no more than a restatement of the conclusions reached in the Ontological section so as to give them reference not merely to things in general but to a physical universe; and as the ontological definitions have been carefully drawn so as to yield exactly the required conclusions, it is not surprising that little is added to what has gone before except the appearance of rigid geometrical demonstration. We are reminded that the universe as a whole has a contingent existence only, since the existence of each of its parts taken separately is contingent.³ This is not a very good argument, but it serves to show how little Baumgarten ever succeeded in distinguishing between the implications of the relation of whole to part and those of the relation of universal to particular. The elaboration of the doctrine of monads as applied to the physical world is more interesting. The monads which make up the universe, since they are actual entities existing independently of one another, must be either simultaneous or successive, or both. Thus each of them has position.⁴ They must not, however, be envisaged as bare mathematical points having no property except position, nor must adjacent monads be thought to touch or coincide with one another. But since each of them is impenetrable, a plurality of them co-existing is extended or occupies space. They should be described as physical points to distinguish them from mathematical points which are mere abstractions.⁵

Now the monads which constitute a world must be completely interconnected, since otherwise they would not form a world at all. Hence they must all stand to one another in relations of ground or consequent, and as a ground can be known from its consequent, every monad mirrors or reflects the whole of the universe of which it is a member.⁶ Differences in the clearness of this representation make possible the differentiation between soul

¹ §§ 294-6.

² §§ 329, 331.

³ § 361.

⁴ § 397.

⁵ § 399.

⁶ § 400.

monads on the one hand and bare or physical monads on the other. Between the former of these exists a nexus which may be called *pneumaticus* and they form together a *mundus intellectualis, moralis, regnum gratiae*.¹ The latter, too, are never merely passive (since they are by definition active substances) so that *materia prima* or bare *res extensa* is an abstraction, and every part of matter should properly be regarded as *materia secunda* possessed of *vis motrix* and never absolutely at rest; for rest, like *res extensa*, is an abstraction.² Thus *vis inertiae* is simply the force in one body which opposes motion or the actualization of *vis motrix* in another.

As regards the constituent parts of body, it follows from the preceding arguments that the ultimate elements are monads and are therefore immaterial. There are in fact no atoms in the sense of indivisible yet extended particles. There are, however, minute physical bodies (*corpuscula*) which are imperceptible to sense and must therefore be distinguished from such phenomena as admit of being sensuously apprehended;³ and, though he does not say so quite explicitly, Baumgarten appears to have supposed that knowledge of such *corpuscula* and their behaviour was to be preferred to sense acquaintance with macroscopic phenomena just because it was non-sensuous and therefore free from the confusedness to which he believed the latter necessarily subject.

Having thus distinguished between monads and *corpuscula*, he can at once maintain that the latter, *qua* occupying space, are divisible without limit, while still holding to the existence of the former as simple, non-spatial, and indivisible substances.⁴

Baumgarten next turns to the final question whether the relation between bodies is to be considered as one of *influxus physicus* or 'pre-established harmony', and, as a result of his earlier definitions, is easily able to prove that it must be the latter. For the admission of *influxus physicus* involves him in maintaining that when body A acts on body B, B is purely passive. In Baumgarten's terminology, *influit A in B realiter*. This, however, he has already shown to be impossible since bodies are 'really' composite wholes of non-spatial monads, and monads are necessarily active since force belongs to their essence. Hence the *influxus* of A into B must be ideal, not real. Thus if we denote their states before and after the impact $A_1 A_2$ and $B_1 B_2$ respectively, on the *influxus physicus* view it follows that B_2 is the consequence simply of A_1 (since B is purely passive). Baumgarten, on the other hand,

¹ § 403.² § 417.³ § 425.⁴ § 428.

conceives it indifferently as the product either of A_1 or of B_1 , since both are active, and it could be inferred from the nature of either of them that at that particular juncture in the history of the universe that it would behave in just that way and also that the other would behave as in fact it has done. The true statement of the case is therefore that A has received a new mode or determination x and B has received a new determination y ; Ax could be inferred from A by anyone who really understood A's essential character: and, since it is part of A's character to reflect the whole universe (including B) By could also be inferred from A by a perfect intelligence.

This conclusion is to Baumgarten doubly satisfactory. In the first place it eliminates from the universe the conception of bare *res extensa*, inert corporeal substance, which can never properly speaking be regarded as the productive cause of anything, and in the second it is completely consistent with the Leibnizian conception of this as the best of possible worlds. For Baumgarten argues that, since 'best' means 'containing the maximum of compossible reality', a world in which both A and B are wholly responsible for, i.e. the ground of, a given result must be more real and therefore better than a world in which A alone is the ground of it while B remains entirely passive.¹

§ 4

The third section of the *Metaphysica*, although it is entitled *Psychologia Empirica*, has in fact little we should now consider empirical about it except the title. It is based throughout on the metaphysical view which has preceded it and relies on observation only for the establishment of matters of fact such as that there are five special senses and that we do remember, imagine, &c. The nature or essence of these activities is then formulated entirely *a priori*.

The central point of the view is the doctrine of pre-established harmony. The soul is a monad, the body is a composite whole of monads, and consequently any occurrence in the former may be explained either in terms of itself or in terms of the body, and each of these explanations is complete and self-contained.² Further, the soul *qua* monad, though it does not occupy space, has position in space,³ which accounts for the fact that it represents some events in the universe more clearly than others. More precisely,

¹ §§ 451, 459. ² § 768. ³ § 745.

its 'location' in the body constrains it to observe the universe as reflected by the monads which constitute that body, but this reflection inasmuch as it is sensuous is always to a great extent confused. As distinct from this outer sense (*sensus externus*) there is also an inner sense (*sensus internus, conscientia strictius dicta*) by which the soul represents its own state to itself,¹ but no further account of this faculty or of its alleged representational character is offered. Sensibility strictly so-called, however, constitutes only a part of the lower or more confused representational part of the soul. To it must be added the capacity to apprehend immediately identity and diversity in the content represented, memory in so far as it is sensuous and not intellectual, imagination and immediate judgement of value as well as an instinctive expectation that the future will resemble the past.² All these activities involve the obscure awareness of connexion, and the faculty which they together constitute is therefore described as *Facultas cognoscitiva inferior* or *analogon rationis*. It is in fact an imperfect or obscure version of that clear apprehension of necessary connexion which only pure reason can give, but none the less it is apprehension of connexion,³ and therefore may fairly be described in this way.

As regards the nature and activity of the superior intellectual faculty little is said, since the treatment of it properly belongs to logic and not to psychology; but Baumgarten makes it evident that the only apprehension of connexion which can properly be regarded as clear is that which occurs in syllogistic reasoning.⁴ He does not in fact state that the distinction between sensibility and understanding is one of degree and not of kind, and indeed he seems often to assume that the latter is the case; but certainly he never openly professes this view and could not have done so without damaging the coherence of his entire system.

The work concludes with 300 sections on morals and theology with which it is unnecessary to deal here, though they were not unimportant in determining Kant's approach to these subjects.

MEIER (1718-1777)

§ 1

Meier's *Auszug aus der Vernunftlehre* (1752), which is an abridgement of the same author's *Vernunftlehre* published at the same time, is a far less exhausting work than Baumgarten's *Metaphysica*. Judged by modern standards its contents are a curious mixture.

¹ § 535. ² § 640 and cf. Kant's note on it. Ak. xv, p. 38. ³ § 544. ⁴ § 642.

The core of it (rather less than a third of the whole) is an exposition of the principles of Aristotelian or formal logic, but this is enclosed in what may be described as a prolonged discourse on method in general, a kind of plain man's guide to correct thinking and exposition in all branches of knowledge. It cannot be denied that parts of this read very oddly to-day, and the sections which deal with the character of a learned man and his methods of expressing himself in speech and on paper are vaguely reminiscent of Aristotle's account of the *μεγαλόψυχος*. Nevertheless the work as a whole is quite a good exposition of the kind of sensible and undogmatic empiricism adopted by Locke to whom Meier was heavily indebted. The *Vernunftlehre* is usually described as eclectic philosophy, in that it qualifies its empiricism with a number of obvious rationalist assumptions as Locke himself had previously done.¹ Certainly these assumptions if pressed are quite inconsistent with the basic empiricism of the book as a whole, but Meier, like Locke, was not given to making difficulties for himself unnecessarily, and there is a strangely modern ring about his contention that no knowledge worthy of the name could be altogether devoid of practical value.² Yet, though he would probably have agreed with Locke and Hume that metaphysical speculation is in itself useless and rather boring, he yields to no one in his admiration for systematic procedure in all philosophical (as distinct from historical) investigation. In his own way he is just as tidy as Baumgarten, and far more superficial, but it is a different kind of tidiness. Obviously it gave him great pleasure to put labels on things and classify them neatly in pigeon-holes; but he did not insist that the number of pigeon-holes should be an exact multiple of 100. The *Auszug* has 563 sections.

Three aspects of Meier's work deserve consideration, namely his views on Logic, on Psychology, and on Architectonic or system-building in general, since in each of these his influence on Kant was considerable and in the last two at any rate it was decidedly bad. As regards the Logic little needs to be said since in principle it is strictly in accordance with the traditional view. But it is hardly doubtful that when Kant talks of General as distinct from his own Transcendental Logic he has Meier more or less definitely in mind. It is noteworthy that the table of judgements³ to which Kant

¹ *Einleitung*, § 2.

² §§ 216-19.

³ Meier, however, is not the only contemporary logician to whom Kant was indebted for this table. See de Vleeschauwer, *op. cit.*, vol. i, pp. 244 ff.

relates his categories, and which he has often been accused of making up to suit his own convenience, is taken almost verbally from Meier;¹ and also that Meier himself, in spite of his empiricism, remained convinced that the deductive syllogism was the only really satisfactory method of demonstration, though he admitted its defects as a method of discovery.

§ 2

Meier's psychological theory is so much an integral part of his view that it cannot be treated in abstraction from the remainder. It is especially prominent in relation to his account of the origin of our judgements about things and of the manner in which we employ those judgements to obtain demonstrative knowledge. His general position is roughly as follows. Ideas (*Vorstellungen*) are the sole contents of the mind, and are explicitly described as pictures of things,² which exist independently of our representation of them. This usage covers a fatal ambiguity which seems not to have occurred either to Meier himself or to Kant who reproduced it. For *Vorstellung* comes thereby to be used as equivalent both to Locke's 'idea' and to Leibniz's *repræsentatio*, in spite of the fundamental distinction which really separates the two notions. Locke maintained that ideas (of sensation) were related to their objects either simply as effects to causes (in which case they were essentially unlike their objects) or else (in the case of primary qualities only) both as effects to causes and as copies to originals. But in so far as they were copies at all, they were exact copies. Leibniz, on the other hand, held that ideas were neither exact copies of nor totally different from their originals, since for him the relation was rather that of ectype to archetype than that of copy to original. Meier attempts to combine these views, but only succeeds in vacillating between them, using each when it suits him to avoid the unpleasant implications of the other.

He next proceeds to define a cognition (*Erkenntniss, cognitio*) as being either an aggregate of representations or the act by which a representation of a thing is produced, cognition and representation being regarded as interchangeable terms.³ They are in fact equivalent to what Hume understood by a complex impression. The next step is to distinguish between a representation (or cognition) and its object, but although Meier asserts the existence of such a distinction,⁴ he would have found it difficult if not impossible to

¹ §§ 301-5.² § 10.³ § 11.⁴ § 12.

say wherein it consisted. Indeed he was apparently quite unaware, as even Berkeley was not, of the inevitable subjectivism of any consistent copying theory unless it is helped out by an explicit doctrine of innate ideas. In practice he simply follows the method of Hume in treating 'complex impression' and 'object' as synonymous terms without considering the implications of so doing.

The next problem is the consideration of the different kinds of content or representation which the mind is capable of employing in its operations, and it is here that Meier's attempted compromise between Locke and Leibniz is most evident. He holds, with the former, that in the end the mind has no materials save those provided by the senses (though his attitude towards such truths as the principle of contradiction and the causal axiom is really inconsistent with this doctrine), and with the latter that different kinds of awareness (sensation, perception, thought) differ from one another only in degree, that is, only as more or less clear and distinct representations. As regards the latter distinction, he is a straightforward Leibnizian. A representation is clear when it is such as to enable me to distinguish the object of it from other objects. It is distinct when in addition the relations of its own constituent parts (*Mannigfaltige*) to one another are distinctly apprehended.¹ Now the lowest level at which clear representation can occur is that of sensation (*Empfindung*), which is defined as the representation of a present thing, and in so far as such representation is clear, it constitutes experience (*Erfahrung*).² Such experience is either mediate or immediate, the former being 'whatever is derivable by a short proof from what is immediate'. Thus, that I think is an immediate experience, but that I possess a faculty of thinking is a mediate experience. We next come to *conceptus* (*Begriff*), a term which, as will shortly appear, does not admit of translation without misrepresentation. It is defined³ as 'a representation of a thing in a being which possesses the faculty of thinking. Hence all our representations are *Begriffe*.' Furthermore,⁴ 'there are as many kinds of *Begriff* as there are different ways of cognizing (philosophical, aesthetic, plain man, &c.)'. This, on the face of it, is a very puzzling view. It becomes less so when we remember that for Meier different levels of apprehension differ only in degree. On this view it is impossible for him to draw any logical distinction between sensation and thought except by

¹ § 14. ² § 201. ³ § 249. ⁴ § 250.

specifying, as he naturally makes no attempt to do, the precise degree of clearness which is the border-line between them. Hence he is reduced to introducing the term *Begriff*, which he has to use in its sense of 'concept' to make his logical theory plausible, and immediately pointing out that strictly speaking it is merely a synonym for *Vorstellung* or for the *Inbegriff der Vorstellungen* which is interchangeable with it. Having thus salved his conscience, he proceeds to inquire into the formation of *Begriffe*, and lays it down¹ that this can occur in three ways, namely by 'experience, abstraction, or arbitrary connexion'. Thus *Begriff* is employed to cover (a) my 'idea' of the particular motion of a particular body, (b) my general or abstract 'idea' of motion, (c) hypotheses which I form to explain (b) by connecting it at will with other abstract 'ideas', e.g. gravitation.

Now (b) may be explained as originating from (a), which is immediately apprehended by sensation, and clearly apprehended as by the application of the method of observation and experiment. We must analyse what is given to sense (i) by the help of instruments (microscopes, &c.), (ii) by physical dissection, (iii) by attention to its origination and the source thereof, (iv) by observing it in different environments so as to pick out what is essential to it.² By this method we achieve an empirical conception (*Erfahrungsbegriff*) of the particular with which we are dealing 'and this conception is true and certain. It represents to us the object as it is constituted, since otherwise we should be inhabitants of another universe.'³ This actually is the nearest Meier ever gets to recognizing and disposing of the subjective idealism which haunts his psychological view.

Now from this *Erfahrungsbegriff* (a) we can proceed to the general idea (b). This is done by 'contrasting the agreeing conceptions of different things and representing distinctly to ourselves those marks which they possess in common'.⁴ The method of framing hypotheses requires no special comment.

It is clear that in admitting the above processes Meier is going well beyond the limits of strict empiricism. He is in fact taking for granted what Kant subsequently termed the 'affinity of phenomena', that is, the possession by things or aggregations of particular sense-data, of determinate common properties which admit of isolation and abstraction. In fact he does this without explanation or apology, since he is convinced that a thing possesses

¹ § 254. ² § 257. ³ § 258. ⁴ § 259.

characteristics (*Merkmale, notae*)¹ which are differentiated in the traditional way into attributes, properties, and modes and that the sum of its necessary characteristics is its essence. Furthermore he maintains without hesitation that this essence (which, in Lockean terms, he holds to be a real and not merely a nominal essence) can be discovered by the empirical method described above.

He is therefore in no difficulty as to whether the method of logical analysis can give us knowledge of real existence, since he has quietly begged the whole question, and is free to proceed at once to expound his logic on traditional lines. For if it is obvious (as he thinks it is)

- (1) that the universe consists of things having essences, modes, and relations of which the first are necessary and the others contingent;
 - (2) that we can discover those essences experimentally;
 - (3) that cause and logical ground are identical² (which he also held in accordance with the tenets of the Wolff-Leibniz view), and that the effect is 'contained in' its cause,
- then none of the metaphysical problems of Hume and Kant need ever arise.

CONCLUSION

The works of Baumgarten and Meier are not exhilarating, and if the study of them led only to the satisfaction of antiquarian curiosity it could hardly be justified. There are, however, two substantial reasons for including them in any introduction to Kant's *Critique*. In the first place their terminology and manner of exposition influenced the form of his work to a greater extent than is generally recognized. Indeed it is not too much to say that all Kant's leading conceptions, such as appearances, representations, and inner sense, and much of his greatly abused architectonic are clearly foreshadowed in the two works which we have just considered. It is impossible to do more than indicate this in a brief survey, and I certainly do not suggest that the content of Kant's mature thought is to any considerable extent anticipated by philosophers who never even recognized the existence of the problems which the *Critique of Pure Reason* claims to solve. What we can discover from them concerns only Kant's terminology and his presentation; but these are far from being unimportant or free from controversy. In the second place, the mere fact that Kant deliberately

¹ § 121.

² § 15.

chose these books as the basis of his lectures on Metaphysics and Logic and retained them for many years is informative. We are apt to forget that German, unlike French and English, was far from possessing a reasonably developed philosophical terminology by the middle of the eighteenth century. Its technical vocabulary consisted of terms translated from other languages and employed without any great attempt at precision. We recognize that words such as 'idea' and 'concept' are of uncertain meaning in the British empiricists; but it is frequently assumed that their German equivalents in the writings of Kant must admit of unambiguous definition. The most cursory reading of Baumgarten and Meier, who were after all standard authors, not philosophical outcasts, will show how little justification there can be for this assumption.

I have not considered here the work of the psychologist, Tetens.¹ His contribution is of a different and more substantial character, but it is especially relevant to Kant's doctrine of inner sense and is best treated in this connexion.²

¹ See below, pp. 154 ff.

² For the influence of other contemporaries, especially Lambert, on Kant's logical development, see de Vleeschauwer, *op. cit.*, vol. i, ch. III, § C.

III

KANT'S PRE-CRITICAL WORKS

§ 1

So far we have considered the specifically philosophical thought by which Kant's development was conditioned, though to do this it has been essential to go beyond what is now considered as purely philosophical subject-matter and to pay some attention to speculations which belong rather to the department of physical and even biological science. In addition it is clear without further argument that the theological implications of metaphysical and scientific theories were of far greater moment in the seventeenth and eighteenth centuries than they are now. In fact it is misleading to consider Kant's early development as dominated by the metaphysical view of Wolff and his successors on the one hand and by the physical theories of Newton on the other, since in this connexion it is impracticable to abstract from the difficulties of rationalism in the sphere of physics or the alleged materialist consequences of the Newtonian conception of space. The philosopher was still considered as the spectator of all time and all existence, and a glance at the titles of Wolff's works will show how seriously he felt his responsibility to live up to this reputation. Hence Kant's problem should not be regarded in modern terms as an attempt to harmonize science with theology, but rather as an attempt to reconcile two complete philosophies each of which had scientific as well as theological implications.

Empiricism and rationalism, however, were not the only influences to which he was subjected. Throughout his life he was to a considerable extent controlled by his respect for the religious doctrines of Pietism. These were a reaction against the intolerant dogmatism of rationalist theologians and aimed, as such reactions do, at basing religion on the private convictions of the individual rather than on the authoritative pronouncements of an organized Church or philosophical school. Pietism therefore was wholly opposed to the Wolffian conception of a rational theology, mathematically demonstrable and as such completely objective and impersonal in character. It was a religion of the heart rather than the head, and attached importance to the performance of moral acts, and to the possession of a good will rather than to the

elaboration and acceptance of a logically coherent philosophical system. Its efficacy depended, as that of non-rational religions is obviously bound to do, entirely on the personal qualities of its adherents, and it must be admitted that many Pietists on obtaining posts of authority were at least as tyrannical and dogmatic as their dogmatic opponents: Kant, however, was on the whole fortunate in his experiences of the manifestations of Pietism, and appears to have seen its effects at their best in the persons of his parents, for whom his admiration seems to have been justified. To this influence, as well as to his own common sense, is to be attributed his constant persuasion that no view, especially in morals, which runs counter to the plain man's convictions or is too complicated for his intelligence can in the end be satisfactory.

It is therefore fair to say that while Kant was educated both at school and at the university of Königsberg in accordance with the tenets of Wolff and his successors, his acceptance of their system was seriously prejudiced at the start. The two teachers chiefly responsible for this were Schultz and Knutzen.¹ The former was the leading theological authority in Königsberg as well as being Rektor of the Collegium Fredericianum where Kant received his early education; he succeeded in combining the virtues of Pietism with a general adherence to the views of Wolff whose pupil he had been. The latter was a physicist who propagated and defended the Newtonian theory against rationalist criticism, and was responsible for the predominantly physical character of Kant's earlier works.

§ 2

Kant's development from his first essay on the *Correct Method of Calculating the Energy of Bodies* published in 1747 to the first edition of the *Critique of Pure Reason* in 1781 is on the whole straightforward and can be briefly summarized. He set out primarily as a rationalist philosopher, though with some doubts as to the perfection of that system especially as regards physical investigations, and until about 1760 he maintained this attitude, though his doubt increased continually as time went on. There ensued a period from 1760 to 1769 in which his difficulties grew so rapidly as almost to overwhelm his conviction and in which his sympathy with the empiricist case almost amounts to conversion. Whether or not he read Hume's *Enquiry* before or during this

¹ See Benno Erdmann, *Martin Knutzen und seine Zeit*, Leipzig, 1876.

period is uncertain. The fact that he subsequently attributed to the author of it his awakening from a dogmatic slumber suggests that he had, but the manner in which he formulated and attempted to deal with his problems provides on the whole better evidence that he had not. On the other hand, he almost certainly did read the *Nouveaux Essais* of Leibniz, which were first published in 1765; and it is reasonable to suppose that this study was largely responsible for his subsequent refusal to accept empiricism as a satisfactory philosophy. At any rate the year 1769, as he says, 'brought him great light', and it may be assumed that the nature of that light is shown by his *Dissertation* published in 1770. Its teaching is that the empiricist and rationalist philosophies are not irreconcilable with one another, but that their conflict is the result of a misunderstanding of the nature of the objects with which mathematics and philosophy respectively have to deal. The complete elaboration of this doctrine is given in the *Critique of Pure Reason* (1781) and the *Critiques of Practical Reason and Judgement* published respectively in 1788 and 1790.

It is hardly necessary to point out that for Kant himself the process of evolution was nothing like as simple as this, and that this division of his thought into periods is largely arbitrary. None the less he did regard 1769 as a crucial date in the growth of his view, and in this it is generally agreed that he was perfectly correct. His publications before that date will be considered only in so far as they seem to throw light on his subsequent treatment of the problems which he finally regarded as being fundamental. Only two of them require anything like detailed discussion, namely *Dreams of a Spirit Seer* published in 1766 and *The Ground of the Distinction between different Regions in Space* (1768). The importance of these works lies in the fact that they show Kant's maximum concessions to the claims of empiricism and make clear the necessity which he then felt either to abandon rationalism completely or to adopt an entirely new and revolutionary standpoint from which it could be still maintained without prejudice to those empiricist doctrines which he could not refuse to accept. The difficulties whose consideration gradually forced him into this position are in the end all reducible to two, namely the problem of the status of the principle of sufficient reason and the problem of the nature of space. The history of his pre-Critical thought is best understood in terms of these.

§ 3

As a natural consequence of his rationalist training Kant's attitude towards the principle of sufficient reason was very different from that of the English empiricists. Locke and Hume regarded it as obvious that a distinction existed between our capacity to apprehend relations of ideas and relations of real existences, with the result that for both of them the hardest of philosophical questions was how the transition from one kind of knowledge to the other could be effected. This problem was for Leibniz only secondary and for his successors virtually non-existent. To them it was evident that our perception of the relations of matters of fact was nothing but a more or less obscure representation of the relations between conceptions which the mind by common consent could apprehend clearly and distinctly, and thus it came about that Kant's problem in relation to the principle of sufficient reason was formulated as the outcome of an accumulation of apparently minor difficulties and was not articulated as a whole until later in his career. This unsatisfactory method of approach was rendered much easier by Baumgarten's 'simplification' of Leibniz whereby the principle of sufficient reason was regarded as derivative and demonstrable by means of the principle of contradiction, since this derivation tended to distract attention from the notion of ground and consequent itself, and concentrate it on the difficulties to which that notion as so derived inevitably gave rise in the interpretation of phenomena. For the immediate consequence of such a derivation is to obliterate the distinction between the physical and the metaphysical and to make the self-contained monad itself an element in the physical world, as Wolff and Baumgarten in fact had done. The implication was that actual physical bodies were connected with one another only as members of a pre-established harmony, and this view, which was clearly inconsistent with the Newtonian doctrine of attraction, gave rise to the prolonged dispute on the issue of pre-established harmony versus *influxus physicus*¹ which was the dominant issue between physicists in Kant's early years. It is worth observing that Knutzen, as opposed to Baumgarten, was an ardent Newtonian and supported the theory of *influxus physicus*.

Kant's first examination of the principle of sufficient reason occurs in the *Nova Dilucidatio*,² in which he insists on the importance

¹ See above, p. 45.

² *Principiorum primorum cognitionis metaphysicae nova dilucidatio* (1755).

of the distinction between logical and real or causal necessitation. The *ratio essendi* of anything, which is its *ratio antecedenter determinans*, is not to be confused with its *ratio cognoscendi* or *ratio consequenter determinans*, so that sequences in the real world in accordance with the law of cause and effect involve a different relation from that which holds between ideas in an inferential process. Although Kant does not here develop this thought, it evidently remained very much in his mind, and applications of it are made to different aspects of the rationalist view in most of his subsequent works.

The first of these which is of importance here deals with the classical doctrine of the *Four Syllogistic Figures* (1762). From one point of view this essay represents an extreme rationalist position, since what Kant wishes to maintain is that the nerve of all demonstration is the *dictum de omni et nullo*, and that consequently the only truly valid syllogistic mode is *Barbara* (the first mode of the first figure).¹ But just because of his uncompromising stand in this, he is driven to admit that a great many propositions which we actually hold to be true do not admit of such demonstration. Indeed all judgements involving concepts whose agreement or repugnancy is immediately obvious without the interposition of any third concept as a middle term are indemonstrable judgements: and human knowledge contains many such judgements. Here again, Kant does not inquire whether the causal axiom itself is an indemonstrable judgement, but the line of investigation which he has commenced is clearly a dangerous one for an orthodox rationalist to pursue very far.

Kant, however, does pursue it, though without any apparent recognition of the conclusion to which it inevitably leads, in his *Essay on the Introduction of Negative Magnitudes into Philosophy* (1763). The purpose of this work is to draw attention to a matter of some interest about which rationalist metaphysics is inadequate to provide an account consistent with that offered by physical science. Metaphysics maintains that opposition can be clearly apprehended only in its logical signification, in which contrary predicates simply annihilate one another. But, as Kant rightly points out, this is not what takes place in the case of real opposition, for instance in a collision between bodies, for here the consequence is a resultant of their previous motions. The point itself is of no great importance, but the use which Kant makes of

¹ Cf. B 141.

it is instructive. All he wishes to maintain is that metaphysics must take account of such real oppositions and include the notion of negative quantities which are used to express them as notions of realities and not merely privations. He does not notice that he himself has now rendered such inclusion impossible by showing, (1) that causal sequences are distinct from inferential sequences, (2) that inferential sequences are strictly valid only when they can be demonstrated conceptually by means of the *dictum*, (3) that physical truths cannot be so demonstrated since the real opposition which many of them involve is entirely different from logical negation. But instead of criticizing rationalism for its failure to provide any logical basis for scientific method at all, he merely urges it to use the notion of negative magnitudes to help its own investigations. The conclusion of the essay, however, shows that Kant is on the verge of formulating his real difficulty in an adequate way. Here he returns from the special question of logical and real opposition to the wider one of the contrast between logical and real connexion in general. The whole passage¹ is too long to quote; but the gist of it is that a causal connexion is never really rendered intelligible by the only account which rationalism can offer of it; for in a valid inferential process (conceived in the very narrow way in which Kant insists that it ought to be) the conception of the predicate in the conclusion is regarded as being actually part of and therefore contained in the conception of the subject. All that inference does is to make the fact that it is so contained explicit by exhibiting the relation of both conceptions to a third conception which is the middle term. But it is quite clear that the causal sequences which as scientists we are concerned to study are not at all like this, for the motion of a body A which is the effect of the impact on it of another body B is not 'contained in' the motion of B but is something quite distinct from it which can never be discovered by analysis of it. But if, as seems to be the case, effects are not discoverable by analysis of their causes, how on rationalist principles are they to be discovered at all?

At this stage the conclusion of Hume that they are not discoverable, but can only be guessed at, is inevitable unless the situation can be saved by a complete revolution in Wolffian metaphysics.

¹ Ak. ii, pp. 201-4.

§ 4

Kant's growing dissatisfaction with the rationalist account of causality was accompanied by his gradual recognition that a rather similar problem existed as regards space. In the first instance this too appealed to him simply as a minor difficulty within the system and not as a weakness inherent in it owing to its fundamental assumptions. He first encountered the problem in the form of the antinomy or conflict between the infinite divisibility of space itself and the alleged indivisibility of the ultimate constituents of matter. In his *Monadologia Physica* (1756) he attempted to solve this problem by the very modern suggestion that particles, since their essence is held by Leibnizian physics to consist in the possession of energy (*vis viva*), need not be conceived as occupying space but should be thought of simply as having position in it. This would be consistent with their having the only important space-occupying quality of impenetrability, since if a particle simply is force radiating from a mathematical point, the resistance offered to any other particle will increase to infinity as that point is approached. This conception of matter as occupying space 'intensively' Kant continued to hold, and the section in the *Critique of Pure Reason* entitled 'Anticipations of Perception'¹ is actually based on it. But whether or not such an account was satisfactory from the point of view of natural philosophy, it could hardly if pressed be made consistent with orthodox Wolffian physics, since it attributed to space a reality in relation to monads which is scarcely to be reconciled with the notion of space as simply confused perception.

The real difficulty, however, is not formulated till 1764. In that year Kant produced his (unsuccessful) prize essay on *The Relative Clearness of the Fundamental Principles of Mathematics as contrasted with those of Morality and Religion*. Mathematics, he there argues, proceeds by drawing conclusions about the implications of conceptions which exist only in so far as certain figures have been constructed. It can never be in doubt whether these conceptions correspond to the facts or not. But the purpose of moral philosophy is to make precise a conception which is given, though in a confused manner. Mathematics in fact proceeds synthetically by constructing figures, whereas philosophy in general proceeds

¹ See below, p. 98.

analytically by the clarification of conceptions. This contrast is further emphasized when we reflect that mathematics deals with its universal terms by means of concrete symbols whose content is objective and invariable (lines, figures, &c.), whereas philosophy must work with words which are notoriously indeterminate and variable in their import. It follows that ultimate unanalysable notions and indemonstrable propositions are few in mathematics but extremely numerous in philosophy, whose starting-point must be true propositions immediately apprehended about the object ; not arbitrary definitions. The proper procedure of philosophy is simply to accept as true propositions derived from experience whose truth we cannot doubt even though they lack the kind of demonstration which mathematics owing to its entirely different procedure is able to provide.

The importance of this essay lies not merely in the extremely empiricist attitude which it advocates in moral and religious philosophy, as well as physical science. From the point of view of Kant's final doctrine it is noteworthy as containing his first explicit recognition of the essentially intuitional or perceptual character of geometry. For having now clearly recognized that the actual perception of lines and figures is essential to geometrical demonstration, he can no longer maintain both that geometry is valid of the world of real objects and that the space in which geometrical constructions are made is simply a confused perception. The position adopted in the essay could only be maintained as long as he thought it self-evident that the space of which I am aware in perception is identical with the objective space in which things exist independently of my perception, but the extreme empiricist position which he now adopts is bound to lead him eventually to question that assumption. For if all our concepts originate in experience, and if this is true even of our conception of space, the validity of geometry itself becomes dubious, so that Kant is driven to ask what the real nature of space may be independently of its presentation to consciousness.

The position of Leibniz had been that the activity of monads consisted in their power of 'representing'; and consequently that space, as involved in my representations, must be analysable into a clear conception, namely that of an order of coexistence. But Kant has now demonstrated that geometry is a synthetic science which differs from philosophy in taking its objects from intuition and connecting them arbitrarily with one another. Space thus

becomes an unanalysable but fundamental notion which does not admit of such a reduction to conceptual terms at all.

§ 5

So far nothing in Kant's published work goes beyond expounding the difficulties with which rationalism is embarrassed. The first real hint of the lines along which the critical solution is to develop occurs in the curious *Dreams of a Spirit Seer* published in 1766. This work is a critical examination of the doctrines of Swedenborg, a spiritualist who claimed to have actual intercourse with disembodied spirits; but Kant goes far beyond his ostensible subject and discusses the whole question of the relation between soul and body with a view to deciding whether the existence of the former apart from the latter can be rationally maintained and, if it can, whether our belief in the existence of such souls can ever extend beyond mere conjecture and hypothesis.

He begins by pointing out that the conception of spirits as immaterial entities which none the less are spatially located in bodies is itself extremely difficult. When carefully considered, however, it may be seen not to differ in principle from the similar problem dealt with in the *Monadologia Physica*¹ of the spatial location of forces which also must be regarded as pervading space without being themselves extended.² Such an account of the character of spirit has the advantage of rendering unnecessary all discussions as to the seat of the soul in the body and also of making possible a distinction in kind between souls and material substances.

Kant admits³ that his personal inclination is in favour of a view of this kind, though he recognizes the great difficulties which the interaction of the soul with the body must present as soon as such a difference in kind is allowed to exist between them. If, however, these difficulties can be surmounted, and he does not regard them as necessarily insuperable, it will be permissible to inquire further into the possible relations of such spirits with one another. We might reasonably maintain that they are related not as the bodies with which they are connected are related in space, but immediately in what he describes as a *mundus intelligibilis*.⁴ To such a world physical relations would be accidental and irrelevant. Now although the existence of such a spirit world is neither obvious nor demonstrable, there does seem to be sufficient evidence for it to

¹ See above, p. 60.

² Ak. ii, p. 322.

³ Ak. ii, p. 327.

⁴ Ak. ii, p. 329.

make it something more than an empty hypothesis. The phenomenon which most favours our belief in it is the existence of a general will or rather of a moral or social sense shared by a number of individuals. For this readily admits of being regarded as the empirical manifestation of a real connexion between spirits just as the laws of gravitation¹ are a manifestation of the real though inaccessible *vis viva* which is the essence of material things.

But if this account is at all sound, it seems at first sight very odd that this spiritual reality behind empirically apprehended individuals is so little revealed to us.² This difficulty, however, is only apparent, for we must remember that the intuition by which a man recognizes himself as a member of the super-sensible world must necessarily be different in kind from his awareness of himself as a human being through a representation which has its origin in his physical body. He must be regarded as the same subject, though not the same person in the two worlds, and between these divergent ideas of himself there is simply no connexion whatever. For the representation of myself as spirit is an inference from the observed phenomenon of the general will: it can never be given in intuition or experienced, but we should be wrong for this reason to assume that all apprehension of a *mundus intelligibilis* is out of the question, for we might be able to represent to ourselves at least something analogous³ to the reality which in itself is imperceptible to us. After all, the subject is the same in both its capacities, and therefore its ideas though admittedly quite disparate need not be entirely disjoined; but it could hardly be denied that even this limited degree of insight is at best the perquisite only of a limited number of individuals and must in its very nature be of subjective validity only.

Thus we can only conclude that there is nothing to prevent us from believing in the existence of a world of spirits if we wish to do so, but if we do, we must remember that there is and can be no proof of its existence since the nature of spirit and therefore of life itself in so far as it is held to be essentially immaterial and non-mechanical is quite inaccessible to our intelligence.

Kant concludes from this that metaphysics regarded as a system of knowledge concerning a super-sensible world must be abandoned as a dream. All that we can claim to know are the

¹ Ak. ii, p. 335. It was presumably this idea which led Kant to treat the ethical views of Rousseau as comparable in importance to the physical theories of Newton. See above, p. 1, n. 2.

² Ak. ii, p. 337.

³ Ak. ii, p. 339.

mechanical laws which can be empirically verified as governing the movements of bodies, and even here we must admit that the reason why bodies obey such laws is necessarily out of our power to discover.¹ His position is even more agnostic than that of Newton had been, for although the latter admitted in the *Principia* that he had not yet discovered the cause of gravity, he suggested that this ignorance was due to a lack of suitable experiments which the future would doubtless supply, and not to any difficulty inherent in things. But what is more important than this approach to empiricism is Kant's notion of the universe as consisting of a *mundus intelligibilis* or world of reality contrasted with a world of sensibility or representation; and also his location of the true or moral self together with really efficacious material causes to the former, whereas those manifestations of force which are the subject-matter of mathematical assessment are held to belong to the latter. The *Dissertation* of 1770 and the three *Critiques* are essentially an elaboration and development of this general doctrine sketched in *Dreams of a Spirit Seer*: they differ from it not in any extension of our knowledge to grasp the super-sensible world, but in their claim to demonstrate that, as far as the sensible world is concerned, our knowledge is *a priori* and not merely empirical in character.

§ 6

THE ESSAY OF 1768

*Von dem ersten Grunde des Unterschiedes der
Gegenden im Raume*

In this very short essay² Kant at last recognizes quite explicitly the insuperable difficulties involved for his physical theory by both the Newtonian and Leibnizian doctrines of space and thus enters on the line of thought which results in the attempted solution of the *Dissertation*. The specific problem is, What account are we to give of 'incongruent counterparts', figures or bodies which are exactly similar but do not coincide when superimposed on one another, as, for instance, a right- and left-hand glove or screw? For if we are to draw any distinction at all between them, we are bound to take for granted the existence of an absolute space in which both exist. To do this, however, involves giving up the notion of space as a predicate or quality of things, for it would

¹ Ak. ii, p. 371.

² Ak. ii, pp. 375-85.

appear that things must be regarded as presupposing space and not vice versa. Hence Kant abandons the rationalist doctrine completely and adopts the view of Newton and Clarke, namely that space is neither the product of abstraction from sensuous experience of things nor itself an object of outer perception but an actually existent real entity of whose nature we are immediately aware by 'inner sense'. Further, 'mensuration provides a convincing proof that absolute space independent of the existence of all matter and itself the ultimate ground for the possibility of the composition of matter, possesses a reality of its own'.

Since, then, everything which exists is in space and as such spatial, there exists no non-spatial, intelligible world as postulated by previous metaphysicians, and metaphysics itself, considered as the science of the super-sensible, must be regarded as mere illusion. The science of nature becomes the only genuine science which we have. This doctrine of space gives further support to the conception of geometry as essentially synthetic, for since intuited space is the ontological presupposition of mathematical objects, it is only to be expected that purely conceptual and therefore analytical thought will fail to penetrate to this sphere and that nothing but intuition can reveal to us the spatial combinations of objects.

The idea of absolute space in fact seems to provide the answer to Kant's difficulties in so far as these are concerned purely with geometry. It enables him to maintain against scepticism the validity and *a priori* character of mathematics while keeping an agnostic attitude towards the alleged super-sensible knowledge of rationalist metaphysicians: it also justifies the peculiar position which he ascribes to mathematics in virtue of its synthetic character, as contrasted with all other sciences including metaphysics; and it does this simply by bringing out the necessarily intuitable character of space which alone makes that synthetic procedure intelligible.

None the less, as he realized, the view was by no means free from difficulties.

For Kant was still enough of a rationalist to recoil from the contradiction involved in the notion of a complete or given infinity. He had as a scientist accepted the notion of infinitesimals and therefore of infinity for purposes of calculation, but to assert as a metaphysical truth that a finite thing could contain within it an actually infinite number of real parts was a very different proposition,

since to assert it would involve giving up not merely metaphysics but also his own physical doctrine of monads as centres of force: for if space is real and infinitely divisible it is impossible to conceive it as occupied by a determinate number of centres of force; yet their number, however great, must be determinate if the doctrine of the conservation of *vis viva* in the universe is to be upheld. Thus he was placed in an unfortunate position. He could not retain the Newtonian doctrine of space and thereby explain the synthetic and apodeictic character of mathematics, except at the cost of sacrificing his physical theory, but he could not return to the orthodox position without giving up his conviction of the *a priori* validity of applied mathematics. He was thus in a dilemma from which he believed that the doctrine of the *Dissertation* offered the only hopeful avenue of escape.

§ 7

THE DISSERTATION (1770)

De mundi sensibilis atque intelligibilis forma et principiiis

It is difficult to decide on the proper method of treating the *Dissertation*. It was Kant's Latin inaugural lecture as a professor at Königsberg, and all that is of material value in it was republished practically verbatim in German in the *Critique of Pure Reason* eleven years later. As Kant published nothing of even secondary philosophical importance during the interim, it is obviously a document of great historical interest as a link between his pre-Critical and Critical doctrines. Its merit lies in the light which, taken in conjunction with his correspondence and fragmentary notes between 1770 and 1781, it throws on his distinction, never clearly elucidated in the *Critique* itself, between phenomena and the things in themselves of which phenomena are representations. This is an extremely difficult problem which is better considered as a whole at a later stage.¹

At this point I shall merely indicate the doctrine of the *Dissertation* and the difficulties of the succeeding period and pass immediately to the mature view of the *Critique*.

Sensibility, Kant now holds, does not reflect things in them-

¹ See below, pp. 146 ff.

selves (noumena) in a confused manner as the rationalists maintain. It is not to be compared with a mirror, since it imposes on things specific forms which exist only in so far as things are represented under them by a perceiving subject. None the less, sensuous knowledge, so far as it goes, is perfectly valid and in no way the arbitrary product of imagination. But it is erroneous to suppose that such knowledge can ever be extended to things in themselves, since it is necessarily valid only of things apprehended under the forms of space and time, that is of representations. Turning now to the understanding, we find that it possesses two distinct functions,¹ namely a logical and a real employment. The former, which consists in the formation of concepts and judgements, needs no explanation. The latter is a capacity of representing that which by reason of its non-sensuous character cannot be perceived by sense at all, e.g. causation.

Concepts of this kind are not derived by abstraction from the data of sense, and consequently should not strictly speaking be termed concepts but rather pure ideas,² which are native to the understanding just as forms of sense are to sensibility. They are not to be regarded as innate, but are derived by us from attention to the operations of the understanding in relation to experience, and since they are of this nature they must embrace not sensuous representations but things as they are in themselves. Mathematics provides the *a priori* science of the world of phenomena in virtue of its pure intuitions, while metaphysics provides the science of the intelligible world in virtue of the pure concepts of the understanding.

This view is a compromise between rationalism and empiricism, and we may suppose that the retreat from empiricism which it involves was the result of Kant's study of the *Nouveaux Essais*.³ It leaves him with a hopeless problem of how things in themselves can possibly be connected to form a world, since space and time do not apply to them; and here he is simply driven back on occasionalism. There can be no specifiable relation at all. Every monad must be conceived as completely in itself and therefore contingent except in so far as it can be regarded as divinely sustained. Clearly as an account of the real nature of the physical universe this is extremely unsatisfactory; indeed Kant himself admits that it reduces universal causality, the principle of the conservation of matter, and indeed all scientific principles outside the range of

¹ Ak. ii, p. 393.

² Ak. ii, p. 394.

³ See above, p. 56.

pure mathematics, to the level of heuristic fictions possessing no objective validity.

The development from the *Dissertation* to the *Critique*, then, consists in Kant's gradual acceptance of the pure concepts of the understanding as being of the same nature as space, that is as being objectively valid of phenomena but inapplicable to things in themselves, and the relegation of the super-sensible world to the state of unknowability to which it had previously been condemned in *Dreams of a Spirit Seer*.¹

§ 8

FROM 1770 TO 1781

The *Dissertation* teaches that things *qua* sensuous are apprehended by us through sensibility, whereas things *qua* intelligible are apprehended by means of the understanding. In contrast to the doctrines of Leibniz it maintains that each of these faculties within its own sphere provides us with *cognitiones verissimae*, but that any attempt to regard the spheres as continuous is doomed to failure at the start. The position is summed up in the sentence 'quas mens ab intellectu fert ideas abstractas, illas in concreto exsequi et in intuitus commutare saepenumero non posse'.² Sensuous knowledge, however far it is carried, will always remain sensuous and will never become transformed into conceptual knowledge as Leibniz had supposed would be the case, and the failure of the rationalists to observe this truth is responsible for the contradictions which arise as soon as any attempt is made to give an account of the nature of space and time in conceptual terms. Up to this point the view is identical with the critical position as expounded in the *Critique*. It is in respect of the character and intelligibility of the objects of the understanding that Kant's mature view differs from the earlier one.

Here again the *Dissertation* view is perfectly simple; too simple, unfortunately, to be retained for long. It is simply that whereas our sensuous knowledge is of the appearances of things, our intellectual knowledge is of things as they really are in abstraction from all conditions of sensibility. In other words, Kant's view in 1770 was that the mind can reach genuine knowledge of independently existing objects by means of pure reason, provided that it is

¹ See above, p. 63.

² Ak. ii, p. 389.

careful in doing so to abstract altogether from the sensuous conditions under which those things are given to us in perception, and the practical conclusion is that geometry deals with appearances while physics and metaphysics (not at all clearly distinguished from one another) give us knowledge of the real as it is in itself.

It seems likely that the decisive influence of Hume on Kant's thought occurred at this point, namely after the *Dissertation*, and it is easy to imagine exactly how the difficulty was brought home to him. 'Does it contain experimental reasoning on matters of fact and existence? No. Commit it then to the flames, for it can contain nothing but sophistry and illusion.' So ran Hume's conclusion in the *Enquiry*; and this constituted a challenge which Kant could hardly ignore. The *Dissertation* manifestly did assert the possession by us of just that capacity which Hume so strenuously denied of obtaining knowledge of real existences by means of pure reason alone. Kant's development for ten years or so is nothing more than his gradual extrication of himself from this position.

For the metaphysical view of the *Dissertation* is that there exist both selves and things. These are all substances in the Leibnizian sense, but (by the doctrine of *influxus physicus*) no longer windowless monads. They can somehow 'affect' one another, though the manner of this 'affecting' is never satisfactorily formulated. But, granting its possibility, we can maintain that the operation of the real thing on the real self produces in that self a representation of the thing, a sensuous, spatio-temporal image. This image would not be an exact 'resemblance' of the real thing, but rather an analogon or symbol of it such that to every part of the representation there corresponded a part (not necessarily like it) in the real thing.¹ Now the crux of this view is that it remains plausible if and only if I can rightly claim an acquaintance with the real thing independently of sense-experience. Locke had evaded this difficulty by his unsupported assertion that our ideas of primary qualities were like their originals,² since on this understanding we can regard the ideas of secondary qualities of things as produced in us by the operation on our senses of minute particles endowed with primary qualities.

Kant, when he composed the *Dissertation*, saw no serious difficulty in such a view, but presumably he came to see it as a result of a more careful study of the central point in Hume's

¹ See above, p. 23.

² See above, p. 30.

Enquiry. For what Hume is there maintaining is first and foremost that this fundamental assumption cannot be established.

Furthermore, the central problem for Kant in this connexion is bound to be the nature of our knowledge of the causal axiom, for the nerve of his position in the *Dissertation* is that real things affect our sensibility and are in fact the cause of appearances in us. Now if this is sound, only two methods are possible for reaching knowledge of real existences: either we must reach this knowledge by pure reason alone or we must obtain it inductively by arguing from effect to cause. But Kant cannot permanently accept either of these views. The first would involve the admission that physics as an experimental science is valueless (since the truth is accessible to pure reason without assistance from experience); the second would lead certainly to the conclusion that physics as an inductive science can give us probability only: not knowledge.

In view of this Kant's main interest ceases to be space and becomes causality: he regards the question 'How is physics possible as a science?' as the question which above all others requires an answer from philosophy. The outline of the answer seems to have occurred to him quite early. It was the elaboration of it which occupied so much time. In principle he regards the problem as solved at once by the 'Copernican Revolution'. For if it can be maintained that causality, substantiality, and the other fundamental concepts of physics are, like space and time, not properties of things in themselves at all but simply forms of my apprehension, it will be possible to understand how, by experimental physics, I can achieve *a priori* knowledge of real (though phenomenal) existences. Physics like geometry may then be deemed to provide *cognitiones verissimae* provided that its operation is restricted to the sphere of things as they appear to me and that it is forbidden to make any assertion as to the nature of 'things as they really are'. We may here anticipate Kant's working out of this scheme to the extent of observing its obvious implication as regards the status of the 'real thing' (not phenomenal, but noumenal). For, on the face of it, by transferring physics as well as geometry to the sphere of appearances Kant has to a great extent emptied the noumenal world of objects of investigation. He has also (by transferring cause to the phenomenal sphere) made the simple metaphysics by which 'real things' can be regarded as just the 'cause' of appearances, untenable. I do not think, however, that he ever abandoned this view in principle. It is

unfortunate that the Transcendental Aesthetic, which is derived wholly from the *Dissertation*, accepts it in a far more naïve form than is compatible with the more complex though substantially identical doctrine contained in the section on Phenomena and Noumena in the *Analytic*.

PART II

THE GENERAL ARGUMENT OF THE *CRITIQUE OF PURE REASON*

INTRODUCTION

ALTHOUGH the repetition of well-known doctrine and the study of unexciting philosophers and immature Criticism which any historical approach to the *Critique of Pure Reason* involves is certainly laborious, I believe that it is not merely justified but is the only sensible method of going to work. It is unlikely; however, that many readers will agree with me, for the conviction that any serious book about philosophy must be judged by its capacity to answer those philosophical questions which are recognized as urgent now is very strong; so, too, is the belief that a philosopher whose terminology is ambiguous can be refuted once and for all by the exposure of that ambiguity even though it arose from an attitude towards reality which the author could hardly avoid adopting and for which he was certainly not responsible.

'Kant', it will be said by critics of this type, 'formulated a question and claimed to answer it. The question was, "How are synthetic propositions *a priori* possible?" What we need to do in order to estimate the philosophical value of the *Critique of Pure Reason* is to discover precisely what questioning thought corresponds to these words. When we have done this we can proceed to inquire whether the *Critique* gives any satisfactory answer to Kant's question. Pre-Kantian philosophy and pre-Critical Kant may throw some light on the history of philosophical thought but have no bearing on philosophy.'

I disagree with this view.

The method of dissection has been tried on Kant's question many times and led nowhere. It cannot be successful because Kant, as we have seen, was concerned not with one question but with several. They were indeed not isolated, but the connexion between them is exactly what the *Critique* as a whole reveals. There was for Kant a problem of space, a problem of cause, and a problem of psycho-physical interaction. He believed that he had discovered a method which led to the solution of all of them, and this method was employed in his transcendental philosophy.

But no amount of preliminary analysis of his question will indicate what these problems were, and no dissection of the *Critique* conceived as a timeless contribution to Philosophy will do much to reveal the nature of Kant's solutions. This does not mean that Kant was himself confused or uncertain as to what the questions were which he wanted to answer, but rather that he understood, as some of his critics have failed to do, the peculiar nature of philosophical inquiry. No mathematician whose questions are ambiguously formulated is likely to meet with much success. But Kant had realized years before he started work on the *Critique* that the distinction between mathematics and philosophy was fundamental, and that definitions which are the starting-point of the former are the aim of the latter;¹ and since for better or worse this was his view, we cannot hope to elucidate his work by analysis, however painstaking, of his opening remarks. The Introduction to the *Critique* is not the few pages of text which are called by that name. It is the entire historical process which culminated in the production of the book, and it is of this that I have given a summary account. If these considerations are borne in mind, it is not misleading to describe Kant's purpose as being the justification of empirical scientific method without prejudice to the validity of Euclid, Newton, or the moral law. His method was transcendental philosophy, and he proposed to survey the field of human knowledge as Locke had done, but from an entirely different point of view. Kant was interested not in knowledge as such but in *a priori* knowledge. He proposed to discover and examine the validity of just those concepts of which he believed that empiricism had no satisfactory account to offer; and the result of this Critical inquiry was to prove

- (a) that Euclidean geometry is valid of objects;
- (b) that Newtonian mechanics is valid of objects;
- (c) that the metaphysics of Leibniz as developed by the Wolffians is not valid of objects.

The general proof of these contentions depends on the already familiar distinction between things as phenomena and in themselves which is the basis of all the three *Critiques*. Special interest belongs, however, to the Transcendental Analytic in the *Critique of Pure Reason* by reason both of its extreme difficulty and of the problem with which it is concerned, 'How is pure physics possible?' Kant's argument here depends almost entirely for its force on his

¹ See above, p. 60.

belief that the empirical psychology of Locke's successors, including their views on the formation of concepts and similar problems, is essentially correct. What he claims to demonstrate is that it is not truly self-sufficient, but needs to assume that certain specifiable *a priori* cognitions are possessed by human beings in order to make even plausible its own account of the origin and extent of our knowledge.

What I propose to do is

- (a) in Part II to run through the *Critique of Pure Reason*, concentrating on the general line of Kant's thought and omitting as far as possible the special problem of the Analytic.
- (b) in Part III to return to the Analytic and show how Kant attempted to deal with the difficulty presented by Newtonian mechanics in the light of the psychological theory which he accepted.

THE CRITIQUE OF PURE REASON

IN this section I have sometimes (as in the case of the Preface) simply summarized Kant's own exposition in the *Critique of Pure Reason* and sometimes (as in the Transcendental Deduction of the Categories) given a restatement of my own which does not claim to do more than express the outline of his thought on a particular problem.

As I do not believe that the first and second editions differ from one another in principle but only in the importance they attach to the special problem of time and inner sense, I have thought it sufficient to give references throughout only to the second edition. In the Transcendental Deduction, however, I have attempted to conflate the first and second edition versions, as I am even less confident than Kant was that the psychological background which the second edition almost entirely omits can be left out without serious damage to the whole thread of the argument. It is necessary for the exposition if not for the proof of his deduction.

PREFACE (B vii—B xxxvii)

To decide whether a particular branch of study is entitled to be called a science or whether it is still in the stage of mere conjecture and guess-work, we must satisfy ourselves first as to the extent to which it leads to results of unquestioned validity and importance and second as to the measure of agreement among those who profess it as to its fundamental propositions and the methods of pursuing it. Judging by this standard, we may say that in three departments of its activity human knowledge is essentially scientific in character, namely in logic, mathematics, and physics. Among these logic is peculiar in that its aim is not, like that of the other two, the obtaining of knowledge about objects but is simply the study of the formal conditions of valid thinking without any reference to the objects with which such thought may be concerned. Hence its task is comparatively simple; and indeed it was completed by Aristotle and has never since required substantial alteration or amendment. Mathematics and physics, however, are in a different position in that each of them can be seen to have required a revolution in our common method of thinking before it could claim to be genuinely scientific. This revolution is required

to explain the transition from a mere collecting of particular instances to the discovery of laws which are necessarily valid of all phenomena and which therefore do not need to be verified in particular instances. In the case of geometry this discovery was made so long ago that all record of it is lost. It consisted simply in the recognition that the properties which belong necessarily to a figure can be discovered neither by simple inspection of particulars nor by the analysis of universal conceptions of which particulars are instances, but by concentration on the *act* by which the figure has been constructed and by realization that no property can be known to belong to it of necessity except those which have been conferred on it by that act of construction.¹ In respect of physics a precisely similar revolution was brought about, though at a much later date, by the introduction of the experimental method.¹ Here, too, it was recognized that neither mere observation nor analysis of universal terms could ever lead to the discovery of natural laws. The experiment fulfils precisely the same function as does the construction of the geometrical figure. When we attend to our own activity in making it we are similarly aware that its result is not merely a particular event but is an example of a law which is universally valid.

If we now turn to the other great department of human knowledge, namely metaphysics,² we are bound to admit at once that

¹ B xii.

² Kant is careless in his terminology, and his use of the term 'metaphysics' is typical. The whole purpose of the Critical Philosophy is to demonstrate that metaphysics in the commonly accepted sense of the word is an impossibility. There is no knowledge of the super-sensible. Hence it seems curious that he should begin by considering the proper method of 'setting metaphysics on the secure path of science'. In fact he distinguishes sharply between what he calls transcendent as contrasted with immanent metaphysics, though he nowhere makes this distinction quite clear. His best attempt at stating it is on B 874, but even this cannot be called satisfactory. His position is:

- (a) Transcendent metaphysics, that is the alleged scientific study of the super-sensible as expounded in rationalist works on ontology, theology, psychology, and cosmology, is illusory.
- (b) The special sciences have no need for philosophical confirmation since they proceed from axioms whose *a priori* validity is unquestioned and reach conclusions which are wholly in conformity with our experience.
- (c) None the less, it is of importance for philosophers to explain this validity in order to determine the limitations both of science and of rationalist metaphysics and so prevent the futile discussions which arise simply because the methods of the two have been confused with one another. Actually the limitation of science is needed to restrain it from interfering not with transcendent metaphysics, which Kant discards completely, but with religious belief. This investigation is the proper task of immanent metaphysics, or,

no similar development has occurred, for no advance has taken place since ancient times, and no single proposition can be formulated which will command general assent among metaphysicians themselves. The nature and existence of God and the self, the validity of the causal axiom, and even that of mathematics are all called into question. In this predicament we may well ask whether a revolution similar to those already made in the other sciences may not be practicable and lead to similar beneficial results. The aim of metaphysics is to study the real as such, that is the universe in general, not this or that special department of it. Hence this revolution requires the hypothesis that the universe in general, in so far as it is capable of being known, contains certain elements which are contributed to it by the mind. This, however, will involve the further supposition that by 'the universe in so far as it is capable of being known' we mean 'the universe in so far as it is capable of being experienced', for then we might hold that, inasmuch as experiencing is an activity, it does contribute something to its own object by imposing on it a determinate form: and if this is so, we may hope to discover that form and in so doing to find out what are in fact the laws to which nature *qua* object of experience is subject.

Such an hypothesis would be not unlike that introduced by Copernicus¹ into the sphere of astronomy. For just as he succeeded in explaining what had previously been regarded as the real motion of the fixed stars as an apparent motion due to the real change in the position of the observer relative to them, so we should be explaining the most general laws of nature, which we normally take to be entirely independent of our apprehension and inherent in things, as being actually contributed by ourselves and relating not things as they are in themselves but things as they appear to us under conditions of sensibility. Naturally such a view can be

as he generally calls it, transcendental as distinct from transcendent philosophy.

¹ B xvi. This analogy between the Copernican and the Critical hypothesis is liable to be misleading. What strikes the reader at once is that whereas Copernicus deposed the observer from his geocentric primacy and rendered him much less important than he had been, the Critical philosophy makes him more important than had previously been supposed. He is no longer regarded as the passive recipient of sense-data but is supposed himself to contribute the formal element in apprehension. This, however, is not the point. All that Kant means by his comparison is that in both hypotheses we find a revolution or drastic revision of a primary assumption which had long been allowed to pass unchallenged. In one case what is assumed is the immobility, in the other the passivity of the observer.

put forward in the first instance only as an hypothesis. It requires confirmation (just as Copernicus's hypothesis had to wait for the discoveries of Newton before it could be taken as scientifically established), and this confirmation is precisely what the *Critique of Pure Reason* will provide.

This demonstration, however, has an implication which is at first sight disquieting. For suppose we succeed in proving that our knowledge of general laws can extend to things in so far as they are objects of sensuous experience, but no farther, we shall admittedly have refuted sceptical doubts (such as those of Hume) as to the possibility of achieving knowledge by the experimental method, but we shall have done so at a price. For we shall be driven to admit that other objects such as God and the self, since they are not capable of being perceived by the senses, do not admit of being known by us. This consequence, however, is found on reflection to be less alarming than it appears. Indeed it provides *prima facie* confirmation rather than refutation of the hypothesis which we are to consider. For the assumption that we do possess knowledge of God and the self in the same sense in which we possess it of the laws of nature is inconsistent with the existence of free will as required by moral philosophy, whereas by distinguishing between things as they appear to us and things as they are in themselves we render a belief in the existence both of God and freedom perfectly consistent with the validity of a scientific knowledge of phenomena.¹

For in the first place it is evident that, so long as we consider causality as a relation which holds between things in themselves (among which the self must be included), freedom must in the end be illusory and God a piece of inconsistent mythology. We should in fact be committed to a thoroughgoing materialistic mechanism in which religion and morality could be preserved only at the

¹ The term 'phenomenon' has not in itself any idealist or subjectivist implications, but is simply the standard word used in seventeenth- and eighteenth-century philosophy to denote the objects with which natural science deals. Cf. Newton's Preface to his *Principia*, 'Since the ancients made great account of the science of mechanics in the investigation of natural things; and the moderns, laying aside substantial forms and occult qualities, have endeavoured to subject the phenomena of nature to the laws of mathematics, I have in this Treatise cultivated mathematics so far as it regards philosophy.'

The precise meaning of the term for Kant, (and of *Erscheinung*, which is its German equivalent) especially as contrasted with its correlate noumenon, is controversial, but except in passages where this contrast is explicitly under discussion it has no specifically Kantian meaning.

impossible cost of abandoning all claim by the human mind to obtain knowledge by scientific methods. If on the other hand we distinguish, as we propose to do, between things as they are in themselves and things as they appear to us in sense perception, this difficulty immediately disappears, since freedom and determinism can then both be postulated of the same entity when considered from different points of view.

And in the second place we may realize that the limitation implied by the new hypothesis is more apparent than real. Admittedly knowledge, strictly so called, of God and the self is now shown to be impossible; but it may be doubted whether the claim to such knowledge which has been put forward by the Schools has ever carried much weight. The plain man's hope of immortality does not depend on his confidence in a Scholastic argument based on the doctrine that the soul is a simple substance; his belief in God does not derive any help from the ontological or cosmological proofs, and his consciousness of freedom rests wholly on his clear apprehension of duties as opposed to inclinations. Now these notions of God, freedom, and immortality are perfectly consistent and intelligible thoughts; and even though we are led to admit that we can never scientifically demonstrate that they have objects corresponding to them, they are not thereby shown to be empty or meaningless. Provided that they do not contradict either themselves or the necessary postulates of the scientific investigation of phenomena (as on the Critical hypothesis alone they can be shown not to do), we are entitled and indeed constrained on moral grounds to entertain them as matters of faith.

Thus the distinction between things in themselves and phenomena, with the contention that the latter and the latter only are possible objects of scientific knowledge to us, is what the *Critique* claims to demonstrate: and if it is successful in doing so it will lay a foundation for a rational view of the relation between science, morals, and religion at no more serious cost than the sacrifice of a large number of Scholastic and theological sophistries.¹

INTRODUCTION (B I—B 30)

It is evident that in point of time all our knowledge begins with experience, but not that it is derived from experience, since the latter may be the indispensable stimulus which moves the mind to an activity of its own. Hence it is important to decide whether

we do possess knowledge which is independent of experience (*a priori*) as distinct from that which is merely empirical (*a posteriori*). Such knowledge must be expressed in propositions which are necessary or universal, for these characteristics can never belong to empirical propositions which merely assert facts and do not enunciate laws. It is obvious that mathematics and physics depend on propositions of this *a priori* kind. Furthermore it should be observed that the immense success of these sciences in producing results which are both confirmed by experience and of the utmost practical value has hitherto been considered to absolve us from asking for any theoretical justification for their procedure and to justify us in assuming that we are capable of formulating propositions expressing laws which necessarily hold good of the real world. In other words, it has been assumed that the mind is competent to obtain *a priori* knowledge by pure reason alone and without any assistance from experience, and we have been encouraged to hope that such knowledge may be extended beyond all experience so as to include the specific objects of metaphysics, namely God and the self. This hope is illusory, but it has been rendered plausible by the assumption common among philosophers that every advance in knowledge consists in a more thoroughgoing analysis of our conceptions of things than has hitherto been made. Now it is true that some of our knowledge is really obtained by this analytical method and that it is of great importance to understand exactly what is contained in the conceptions which we use. But propositions which express such knowledge, though they are indeed necessarily true since they are guaranteed by the principle of contradiction, merely make explicit what we already know and do not add to it. They are explicative, not ampliative, in character. To possess the latter property a proposition must assert of its object something which is not contained even implicitly in the conception of that object, that is, it must be synthetic¹ and not analytic. The importance of this

¹ B 11. The question which Kant is attempting to answer may be formulated as 'What entitles us to make statements which assert the existence of necessary connexions between matters of fact?' His method of putting it, 'How are synthetic propositions *a priori* possible?' is accounted for by the importance which he attached to the distinction between synthetical and analytical propositions as marking the primary distinction between Criticism and Rationalism. From our point of view it is not satisfactory, since it depends for its plausibility on the distinction between essential and accidental properties of things. Only the former are 'contained in the conception of the thing' and therefore predicable of it in analytical propositions *a priori*; hence it must not be supposed that what I

distinction has not been observed before, mainly because it has been taken for granted that the axioms of arithmetic, geometry, and physics are all analytic in character; but this is a complete mistake. For if we consider the assertion that $7+5=12$, we find that in the end its certainty depends not on the analysis of the conceptions¹ of seven, five, addition, and equality but on the actual process of counting which requires sensuous intuition rather than conceptual analysis: and it is even more clear that geometrical knowledge ultimately depends not on the analysis of the conceptions of triangularity, straightness, &c., but on the construction (whether on paper or in imagination) of geometrical figures. Hence, although the demonstrations of arithmetic and geometry are

happen to know about the thing *ipso facto* forms part of 'the conception of it'. The fact that Jones has red hair may be known to me and so be carelessly said to be contained in my idea of Jones, but strictly the proposition 'Jones has red hair' is synthetic and not analytic, since the having of red hair is an accident and not an essential characteristic. Similarly the proposition 'All bodies are extended' does not cease to be analytic because I can to some extent verify it empirically. Extension belongs to the essence of body, heaviness does not.

As soon as this is understood, the point of Kant's fourfold division of judgements is clear.

Analytic $\left\{ \begin{array}{l} a \text{ priori} \\ a \text{ posteriori} \end{array} \right.$

Synthetic $\left\{ \begin{array}{l} a \text{ priori} \\ a \text{ posteriori} \end{array} \right.$

Of these the analytic *a posteriori* ('the Albert Memorial is extended') may be discarded at once since it is merely a weaker form of the analytic *a priori*. Analytic propositions *a priori* depend on the principle of contradiction and the *dictum de omni et nullo*. They are adequately dealt with in rationalist text-books on logic. Synthetic propositions *a posteriori* merely register perceptions ('this rose is red') and are assumed to present no difficulty. We are left with synthetic propositions *a priori* as the only kind which require discussion.

Of course if we take it as obvious that all propositions which are not trivial or purely verbal are synthetic and *a priori* in Kant's sense of those terms, his classification becomes artificial and meaningless. But if we accept, as he certainly did, the distinction between essence and accident as being of considerable importance, it is perfectly intelligible. The distinction between synthetic and analytic propositions must not be confused with that which he sometimes draws between synthetical and analytical methods of proof. The latter is simply adopted from mathematics and is not peculiar to Kant.

¹ Kant's use of the term *Begriff* (concept) is so general that no one word in English can be used to translate it throughout the *Critique*. He considers the contents of the mind to be

- (a) immediate data of sense, including actual perceptions of things;
- (b) ideas or images of things not actually present to sense;
- (c) general ideas or discursive concepts.

Begriff is used indifferently to cover the whole of (b) and (c). It is only fair to him to notice that 'conception' was equally ambiguous in English. Cf. Stewart. 'By conception I mean that power of the mind which enables it to form a notion of an absent object of perception, or of a sensation which it has formerly felt.' (Quoted in *O.E.D.* 'Conception'.) The further ambiguity between universals and ideal particulars or schemata is considered later. See p. 179 below.

analytical and may be made by means of the principle of contradiction, their axioms are all synthetic as well as *a priori* in character.¹ They are propositions which claim universal validity in spite of the fact that their predicates are not contained even implicitly in the conceptions of their subjects.

The same assertion will be found on examination to hold good both of physics and of metaphysics. The conception cause cannot be discovered by analysis of the conception of an event, and propositions which assert the freedom of the will or the immortality of the soul are certainly synthetic since they can be denied without self-contradiction (which would be impossible if their predicates could be shown by analysis to be contained in the concepts of their subjects).

Hence our first attempt must be to discover what it is that justifies us in formulating propositions of this kind (synthetic *a priori*) in mathematics and physics,² for in view of the success of these sciences it cannot reasonably be doubted that we *are* justified, and we have therefore only to discover the reason. We must then consider metaphysics, but in this case our problem is twofold. On the one hand it must be admitted that here too we do formulate synthetic *a priori* propositions, but on the other it cannot be denied that such propositions do not and in the nature of the case cannot receive the same kind of confirmation from experience as do those of mathematics and physics. Hence we must examine first the origin and second the possible validity of such propositions, and our four questions are:

- i. How is pure mathematics possible?
- ii. How is pure natural science possible?³

¹ B 14.

² B 20.

³ Kant believed himself to have demonstrated far more as regards the *a priori* validity of physics than would be dreamt of nowadays, in that he did not regard what he took to be its fundamental axioms as in any sense hypothetical. Modern physicists regard their science as empirical to a far greater extent than Newton, let alone Kant, would have thought tolerable. Its aim is to evolve hypotheses which are coherent with one another (though even this condition is not satisfied without qualification) in order to explain phenomena. An hypothesis is taken to be confirmed when observed phenomena agree with it, and this demand that phenomena should 'conform' is considerably modified by the use of statistical methods of verification. In no case is it maintained that any law is valid beyond the possibility of subsequent revision. Thus in practice the view taken is that of Hume. It is agreed that we can detect necessary connexions between ideas (so that hypotheses must at least aim at being consistent with themselves and with one another), but the employment of these hypotheses in interpreting phenomena is not supposed to give anything more than probable results.

Kant, on the other hand, was convinced that physics, as far as its principles

iii. How is metaphysics possible as a natural disposition?

iv. How is metaphysics possible as a science?

The answers to these questions form the essential basis for all rational investigation both in science and philosophy, and the *Critique* which discusses them is therefore to be regarded as the propaedeutic to a system of Pure Reason. The inquiries contained in it are called transcendental¹ inasmuch as they are concerned not primarily with our knowledge of things but rather with the possibility of knowing things *a priori*. They are therefore reflexive or self-conscious. I may accept the propositions 'All bodies are extended' and 'Everything that happens has a cause' without proceeding to investigate the question 'How is such *a priori* knowledge possible?' Hence the *Critique of Pure Reason* is a critical investigation of the possibility of *a priori* knowledge in the three departments in which such knowledge is commonly but uncritically held to exist, namely metaphysics, physics, and mathematics. Logic is held to be exempt from such criticism in virtue of its purely formal character. It does not claim to give us *a priori* knowledge of things.²

TRANSCENDENTAL AESTHETIC (B 33-B 73)³

[How is pure mathematics possible?]

The Preface and Introduction have already shown that the axioms of arithmetic and more obviously those of geometry

were concerned, must be a matter of knowledge, not of mere belief or opinion. He was ready to limit the sphere of this knowledge so as to exclude from it the objects of transcendent metaphysics, but within the phenomenal realm physics must be not merely supreme but absolutely certain.

Thus he held that the laws of motion, the principle of the conservation of mass, and the equality of action and reaction could be shown entirely *a priori* to be necessarily valid, and he held the same view as to the validity of Euclidean geometry. The latter he believed could easily be demonstrated; the former only with great difficulty, though the *Critique* actually provided the principle of such a demonstration. As he frequently maintains, it must be possible to draw up a complete catalogue of the whole of our *a priori* knowledge, and for this purpose the *Critique* is an indispensable preliminary. As far as physics is concerned, the task is completed in the *Metaphysical Foundations of Natural Science* (1786).

¹ B 80, 81. The different meanings of transcendent and transcendental have already been mentioned (see note, p. 76). Kant is not entirely consistent in his adherence to his own distinction, but no difficulty arises except in respect of the phrase 'the transcendental object'. Most of the passages in which this occurs are omitted in the second edition. See p. 177, n. 2.

² Cf. Preface, B ix.

³ The psychological section with which the Aesthetic opens is liable to receive a great deal more attention than it deserves. All that can safely be said of it is

require for their apprehension something beyond the accurate analysis of conceptions, namely the immediate apprehension of what is put into a figure by our act of constructing it.¹ Hence if we are to understand the nature of our *a priori* certainty with regard to them we must investigate our faculty of immediate apprehension [*Anschauung*], since, whatever may be the position of beings differently constituted from ourselves, it must be admitted that sensibility is the only form of immediate apprehension which we possess. Now the object of sense is an appearance [*Erscheinung*] of something which affects us, and these appearances may be analysed into matter, which is their sense-content, and form, which brings it about that such content is arranged in a specific manner and which therefore cannot be itself regarded as belonging to sense-content but rather as something already present in the mind and therefore capable of being apprehended in abstraction from all content. Such apprehension is pure (as distinct from empirical) intuition, e.g. the apprehension of the extension and shape of a body in abstraction from all its other properties.

The purpose of the Aesthetic is to consider these pure forms of sensuous intuition, and introspection shows that there are two of them only, namely space and time, which condition respectively the outer and the inner sense.²

When we consider space, we find that it is both *a priori* and sensuous in character. It is *a priori* (as opposed to empirical) since it is necessarily presupposed by and inseparable from all immediate awareness of particular appearances of things outside us.³ For I

that it constitutes a very rough statement of the empirical psychology of perception which Kant in company with most of his contemporaries tended to accept uncriticized. It hardly admits of a really satisfactory formulation, since most of the notions which it uses are inherently confused and incapable of being given any very precise meaning. For a further statement of Kant's theory of perception, see pp. 146 ff.

¹ See above, p. 76.

² The avowed aim of the Aesthetic is to expound the *a priori* character of space and time as the forms respectively of outer and inner sense. At the time of its composition, however, Kant had no special interest in time. He had not yet realized that it involved any difficulties other than those inherent in the nature of space. He likewise accepted without criticism the current psychological distinction between outer and inner sense; the former makes us acquainted with objects in space, while the latter reveals to us the operation of our own minds. It is therefore useless to ask at this stage for any precise account of the distinction. The Aesthetic should be regarded simply as a treatise on space, and the problems of time and inner sense reserved for consideration in connexion with the teaching of the Analytic.

³ The doctrine that our notion of space is not derived empirically from experience is directed primarily against the English form of empiricism. The argument

cannot perceive things as outside myself or one another except in so far as I perceive them as related in a single all-embracing space, and it is impossible for me to abstract them from space and consider them as non-spatial in the same way as I can abstract space from them and consider it by itself.¹

Hence space is a necessary,² that is, an *a priori* condition of the existence of all appearances to outer sense. Furthermore, this condition is sensuous and not intellectual in character. For if it were the latter, it would be a discursive or universal conception and the parts of space would be related to the whole of space as instances are to a universal (i.e. as particular patches of red colour are to redness). This, however, is obviously not the case since the

is that space is presupposed in the perception of phenomena and therefore cannot be derived inductively from that perception. Hence Kant concludes that space makes phenomena possible and not vice versa.

On his own grounds this contention that our apprehension of space is non-empirical and therefore *a priori* seems sound enough.

¹ The relations of space to things is not that of attribute to substance. On the contrary, substances with their attributes demand the presupposition of space as a condition of their possibility. That they do so is proved by the fact that we cannot frame to ourselves any idea of non-spatial substances, though we can of empty space.

This argument is not altogether convincing, but it nevertheless has some force. I can frame to myself the idea of a particular in abstraction from some of its attributes—e.g. a table in the dark which has no colour, a rose which has no smell, or food which has no taste. I cannot (though this may only be from want of trying hard enough) frame to myself the idea of any of these in abstraction from their spatial characteristics.

On the other side, the idea of empty space does not seem to me to be meaningless, though admittedly it is very hard to be certain of precisely what it is. The words 'empty space' are significant; the words 'unextended table' are not.

The argument is directed against the Leibnizian and *a fortiori* against the Cartesian view.

² This argument requires some consideration because it involves an assumption which is made throughout the *Critique*, though no satisfactory proof of it is ever offered. Kant's theory (as he states it in the Preface) is that either the object is the condition of my perception of it or my perception is the condition of the object, i.e. either cognition depends on the object or the object depends on my cognition. Taking it for granted that this is a valid disjunction, he holds that if he demonstrates the non-empirical, i.e. non-inductive character of my cognition of space, he has *ipso facto* demonstrated my apprehension of it as *a priori*.

But this is not obviously true, since it is at least conceivable that such apprehension is empirical in the sense of being given in and with experience and *a priori* in the sense of being non-inductive in character, though this would involve the admission of some kind of intuitive apprehension of the essential character of a real existent. The point is therefore of no great importance as regards Kant's view, since he held that intuitions of this kind were impossible (B 138) and was consequently entitled to maintain his disjunction as valid. To have done otherwise would have meant admitting that Hume's difficulty was unreal, which he did not believe to be the case.

parts of space are themselves spaces, and stand to space itself in the relation of part to whole, not that of particular to universal. Space is a particular, and my notion or concept of it must be intuitive and not discursive in character.

Hence pure mathematics is possible as a science: for inasmuch as we have an intuitive awareness of pure space as being at once sensuous and *a priori*, there is no difficulty in seeing how we can apprehend necessary connexions within it independently of any conceptual analysis.

But further consideration of the implications of the view is called for, and from this it may be recognized¹

- (1) that space cannot be a condition of things as they are in themselves, for to say that something is 'in itself', i.e. has true independent existence, when it presupposes the antecedent existence of something else (space) is a contradiction.

Therefore

- (2) Space must be the form, not of things in themselves, but of all appearances of these things to the mind in perception; it must be the subjective condition of sensibility under which alone immediate awareness of appearances of things as outside us is possible for us. And since this is the case, it follows that applied geometry also is valid of all appearances which objects can occasion in us through outer sense.

The same arguments which hold of space are also valid of time which is the form² of inner sense, or of consciousness strictly so-called. All that needs to be added is that time is in fact more all-embracing than space. For whereas the latter is a condition only of appearances of what is independent of us, time is the form of consciousness in general and therefore may be termed the immediate condition of appearances of our own self and the mediate condition also of appearances of what is independent of us.

Further Explanation

This account of the nature of time and space is essentially different from both the leading views which have previously been held. Newtonian physics has maintained that space in particular is something real in which things exist but which is by itself nothing, though it must be conceived as infinite, self-subsistent, and eternal, a view which, when pressed, leads inevitably to self-contradiction. The school of Wolff and Leibniz, on the other hand,

¹ B 42.

² See above, p. 84, note.

have rejected this view and have attempted to explain space and time as relations of appearances abstracted from experience and confusedly apprehended. This must lead to the conclusion that mathematics is invalid of real things in space. Both these difficulties are avoided by the Critical view which regards space and time as forms valid only of sensible objects, that is, as being empirically real but as having no applicability to things when considered in abstraction from our actual or possible sensuous awareness of them. For the Newtonian difficulties spring from the notion of space as something independently real and the Leibnizian from the notion of it as a relation confusedly apprehended; both views must therefore be regarded as erroneous.

It may, however, be objected that in treating space and time as the forms of appearances only and not of things in themselves, the Critical view reduces bodies to mere illusion and even makes it impossible to draw any genuine distinction between illusion and reality. This is a complete mistake arising from a failure to take account of what is being asserted. To make matters more clear it should be pointed out that the term 'appearance'¹ is somewhat ambiguous and is often used, especially in common speech, for that which is illusory or dependent for its existence on the perceptual peculiarities of particular individuals. The whole of what are sometimes called the secondary qualities of things are subjective and therefore to be regarded as appearances in this sense. Spatio-temporal properties, on the other hand, are usually and rightly distinguished from these and regarded as the realities of which the secondary qualities are only 'appearances'. This, too, is in accordance with the Critical view which holds that space and time as forms of sensibility are empirically real, and possess complete objective validity for all percipients whatever. The innovation of the Critical view is to conceive yet another level of reality, namely that of things as they are in abstraction from all experience, and to point out that in relation to these even space and time and the objects in them with which applied geometry and physics are concerned, must be regarded as appearances,² that is, as transcendently ideal.

It might further be objected that the view, though plausible in respect of space, is inadmissible in respect of time, since by common consent we apprehend ourselves in time, and thus time at least is shown to be the form not of an appearance but of a thing in itself.

¹ For a further statement of Kant's view, see pp. 146 ff.

² B 63.

This, however, is an error since the object of my internal consciousness is always a series of acts¹ and never the true subject whose acts they are. The latter is as much hidden from my inspection as are the things in themselves which appear to my senses as objects in space outside me.

TRANSCENDENTAL LOGIC (B 74–B 732)

Transcendental Analytic (B 89–B 349)

[How is pure physics possible?]

The aim of the Aesthetic was to demonstrate that the axioms of arithmetic and geometry are really valid of the phenomenal world of our experience. The Analytic is designed to perform the same service for physics. The method adopted is in principle that of the Aesthetic, but in view of the complexity of the subject the proof is more elaborate and includes steps which in the Aesthetic had been omitted as obvious. Essentially it consists of four stages:

1. Demonstration that, just as sensibility has its proper forms of space and time which it imposes on matter presented to it, so thought or understanding has forms peculiar to it, namely the pure concepts of the understanding. These are discovered and enumerated in the Metaphysical Deduction. B 91–B 116.
2. The demonstration that these forms of thought, like the forms of sense, are necessarily valid of objects. Transcendental Deduction. B 117–B 175.
3. The explanation of how these pure concepts can be employed by the imagination so as to give rise to the fundamental axioms of physics. Transcendental Schematism. B 176–B 188.
4. The enumeration of these axioms and the demonstration that they are necessarily valid of all phenomena. Analytic of Principles. B 188–B 295.

To this is added a section on the critical distinction between phenomena and things in themselves, B 295–B 315, and a criticism of the metaphysic of Leibniz and Wolff, B 316–B 349. It is important to remember this programme since it is common to regard Kant's purpose as having been much less complex than it actually was, with the result that much of his argument seems to be only repetitive. Had he merely wished to refute Hume's view that we

¹ See below, p. 155.

can never justly claim to apprehend necessary relations between real existences, much of what he says would certainly be redundant. But in fact his aim was not merely to answer Hume but also to provide a metaphysical basis for Newton, and it is to this fact that many of his difficulties must be attributed.¹

Metaphysical Deduction of the Categories (B 91–B 116)

The procedure of thought (as distinct from that of sensibility) in providing us with cognition of objects is discursive. Its method is to frame conceptions and to unite these in judgements, so that its relation to the real may be described as mediate in contrast to the immediate apprehension of sense or intuition. But the relation between conceptions which judgements assert is not always of the same nature, as is shown by the table of judgements (universal, particular, negative, &c.) with which formal logic provides us.² When I assert that A is B, I am asserting a different kind of relation between A and B from what I should be asserting if my judgement were 'A is not B' or 'A may be B'. To enunciate a judgement is to perform a synthetic act, comparable with the construction of a triangle; both processes involve the introduction of synthetic unity into a multiplicity or manifold, and we are therefore led to ask what ground there may be for the particular kinds of synthesis which the table of judgements exemplifies. The answer, Kant maintains (though he makes no attempt to prove the point), is that each form of judgement, when carefully considered, is found to assert between the concepts which it synthesizes just the kind of connexion which is expressed by one of the concepts corresponding to his (considerably revised) table of Aristotelian categories.³

For instance, the hypothetical form 'If A is B, then it is C' asserts the kind of connexion which is expressed in the conception of the relation of ground and consequent, whereas the categorical 'A is B' asserts the connexion expressed by the conception of the relation of a substance to its attribute.

What Kant means by this becomes clear when we recognize that the bare formulation of an hypothetical proposition implies that I understand the relation of something conditioned to that which is its condition. If I did not, then that particular form of proposition would be entirely meaningless to me. It is in this sense that the

¹ This aspect of his thought is considered in Part III.

² B 95.

³ B 106.

category or pure concept is held to make possible the judgement form which corresponds to it.

This is the central contention of the Metaphysical Deduction, and in the light of it Kant's line of thought may be thus restated. The specific activity of the understanding is to formulate judgements, that is, to perform acts of synthesis between concepts in one of the twelve distinct ways which are laid down in the table of judgements. The kind of synthesis which each of these forms effects is given by the category which corresponds to it in the table of categories. Hence the categories are described as functions of unity in the judgement.¹ They are indeed the necessary forms of thought without which judgement, and therefore the human understanding itself, would be an impossibility.

Transcendental Deduction of the Categories

(A 85-130; B 117-169)

§ I

In this summary I shall take no account either of the controversy as to the unity and coherence of the Deduction in the first edition of the *Critique* or of the precise nature and importance of the innovations made by Kant in the second edition; nor shall I adhere to the order of his exposition. There is, I believe, no substantial difference between the positions maintained in the two editions, though the weight attached to psychological as contrasted with logical considerations is not the same in both of them. It should be remembered that in Kant's own view the second edition was really a supplement to the first,² not a cancellation of it, and that his thought is therefore likely to be represented by a conflation of the two rather than by concentration on either to the exclusion of the other.

The importance of the Deduction for the Critical philosophy as a whole requires no emphasis. Kant himself repeatedly lays stress on the difficulty as well as on the originality of it. There are, however, two points of view from which it may be approached. We may consider it as a contribution to the theory of scientific investigation in the broadest sense: in which case its purpose is to prove that the forms of thought as well as those of sense must enter into the constitution of all possible objects for beings with

¹ B 93.

² B xlii.

cognitive faculties such as ours are. Viewed in this way it really is the heart of the *Critique*, the subsequent discussions in the Schematism and the Principles being only a postscript designed to clear up uncertainties in the central doctrine. Or we may, on the other hand, regard it, as Kant himself did, as only a step, though an exceedingly important one, in his answer to the question 'How is pure physics possible?'

It is important to observe this distinction because, if we concentrate as I propose to do here on the first of these two points of view, Kant's argument, though it is difficult, can be quite briefly stated since much of the detail of his proof is superfluous. I hope to show later (in Part III) that a large part of it is strictly relevant not to the question 'Must we accept the existence of an objective world subject to the categories in order to explain the possibility of thinking in general?' but to the further and different problem 'Exactly what characteristics must we concede *a priori* that the objective world possesses if we are to account for a variety of psychologically verifiable facts?' Admittedly the Transcendental Deduction is not directly concerned with the second of these problems since consideration of it belongs officially to the Analytic of Principles. Nevertheless the Deduction argument in both editions, but especially in the first, is greatly complicated in order to prepare the way for what comes later.

§ 2

Kant's line of argument is as follows:

It is an undeniable fact that we do think and that our thinking is expressed in judgements. We have seen in the Metaphysical Deduction that the act of judging demands the employment of pure concepts or categories defined as functions of synthetic unity. But thinking has an objective as well as a subjective side to it; every judgement will be found on examination to postulate the existence of an 'object of representations' to which our thought refers. It is ultimately with the meaning of this phrase that the Transcendental Deduction is throughout concerned. When I formulate a judgement I am not, Kant maintains, simply registering the relation of my ideas to one another. What I claim to be doing is to say something about the object which those ideas represent. This is equally true whether the judgement is categorical, hypothetical, or an instance of any of the other forms enumerated

in the table of judgements. But difficulties soon arise when I begin to ask myself more carefully what kind of thing this 'object' can be. We cannot identify it with any quality or relation, or with any complex of qualities or relations, for by definition it is that to which our ideas of particular qualities and relations are all of them referred. Must we then admit that we understand by it just a substratum, a mere unknown x ? It is at this point that Kant's theory becomes difficult and important. He denies that such an admission will meet the case and thereby abandons any attempt to justify the doctrine either of rationalism or empiricism so far as physical things are concerned. Far from being a 'something I know not what', the object has in his view a very important and intelligible function to perform. Essentially it is that which provides necessary as distinct from accidental connexion among our representations. Experience in the strict sense must be clearly differentiated from day-dreaming, and the point of the distinction lies in the fact that every judgement as such claims to be valid generally for all men, not merely for its framer. Although it is not obviously the case, Kant believes himself able to demonstrate that unless the existence of a system of necessarily connected objects to which our thoughts refer is conceded, we are utterly unable to explain the existence of any coherent or unitary self at all. Indeed in the absence of any such reference we should have no experience, but only a 'mere play of representations, less even than a dream'.¹

The point which he is making is most easily understood if the question is approached from the side of the self. It will be granted that every idea which can conceivably occur to me must be capable of conscious apprehension. It must admit of being accepted into that whole which I call my consciousness. To be thus admitted is to be apperceived, and the sign of such apperception is the prefixing to the idea of the phrase 'I think'. No idea, then, can be entertained by me which is not capable of being apperceived or of becoming an element in a unity of apperception. But the whole of the ideas which I entertain constitute together a unity which is my conscious self, and this unity is not a mere aggregate, for if it were 'I should have a self as variegated and diverse as the ideas of which I am conscious'. Rather it must be a synthetic or connected unity, intellectual and not sensuous in character. We are thereby enabled to distinguish between apperception and associa-

¹ A 112.

tion. The latter might give a chain of ideas, but only the former can combine those ideas so as to give a properly conscious self which is aware of its own identity in apprehending what is manifold in them. The synthetic unity of apperception, however, is not strictly speaking something produced by the understanding: it is simply the understanding itself. For to understand is nothing more than to introduce unity into the manifold of presented ideas: and ideas as synthesized into an intelligible unity are the understanding. To make this clearer we need only consider the operation of the activity of the understanding, namely thinking or judging. We have said that to think is to unify ideas by receiving them into the synthetic unity of apperception. This process proceeds by relating our ideas to objects (since understanding is the faculty of knowledge), and therefore the understanding or, what is the same thing, the synthetic unity of apperception is possible only in so far as the ideas presented to us are capable of being thought as connected with one another in objects. Thus the fact that there is thinking leads to the conclusion that an object of thought in some more complex sense than that of a bare substratum of qualities and relations must exist. It is needed for the purpose of imposing a necessary unity on our ideas and thereby making possible the unity of apperception, which is the understanding. What, then, must we hold the nature of the object to be? As I have said above, the answer to this question is what the whole Deduction is supposed to provide, and the clue to it is given by Kant's fundamental conviction that by necessary connexion we must always and only mean connexion which is the product of a *priori* synthesis. The object is, therefore, to be conceived as a ground of synthetic unity. By this he does not mean that an object, such as an orange, is something which we make by putting together ideas of yellow, round, sweet, and so on. It is with the 'affinity' or necessary relatedness of phenomena, not the associability of representations that he is concerned. His view is rather that, in regarding the orange as an object, we conceive the qualities which we judge to belong to it as springing from or dependent on some necessary connexion *in rerum natura*, not merely as accidentally juxtaposed. To maintain that this connexion is synthetic implies that we are capable of understanding its nature, which is possible for us only if it exhibits the characteristics of construction according to a rule.

If we now proceed to ask what this rule can be, the answer is

not far to seek. The main justification of Kant's whole account of the nature of the phenomenal object is that it is required in order to make thought possible. The Metaphysical Deduction has proved that thought is based on the employment of the categories, and the Transcendental Deduction has demonstrated that the existence of objects, conceived as grounds of synthetic unity, is a further requirement. We may therefore combine the two conditions and conclude that the nature of that synthetic unity is provided by the categories. They must now be regarded not merely as functions of unity in judgements but also as the ground of unity in experience if thought and the self which depends on it are to be possible. The unity of nature is an intelligible unity, and the phenomena of nature are things subject to the forms of our thought, without which subjection they could never be recognized by us as constituting a world or nature at all. But how such subjection is possible remains to be explained in the sequel.

Analytic of Principles (B 170–B 294)

§ 1. *Introductory*

The doctrine of the Schematism and the principles derived by means of it requires some preliminary explanation. Its difficulty is the result mainly of excessive condensation and of the virtual omission of the central theme which connects it with the Aesthetic and the Deduction of the categories, namely the notion of phenomena as an objective order of things distinguishable on the one hand from subjective apprehension and on the other from things as they are in themselves. The Transcendental Deduction is held to have proved:

- (a) that if understanding is to be possible, there must be such phenomena, since otherwise no judgement would have objective reference (except on the assumption that judgements refer to things in themselves, in which case they would all inevitably be *a posteriori*, and scientific knowledge as Kant understood it would be out of the question);
- (b) that these phenomena must be subject to the categories, which are the foundation of our judgements and in terms of which therefore we must think if we are to think at all.

These phenomena are the reality about which, in so far as we

think scientifically, we formulate synthetic propositions *a priori*, and the general purpose of this central section of the *Critique* is to explain how we are able to do this. It is essential to show exactly what is meant by saying that phenomena are 'subject to the categories', and also what synthetic propositions *a priori* are made possible by their being so, and to this end we need more precise information about the character and status in reality of phenomena than is given by the proposition that they are objects whose function it is to provide the synthetic unity demanded by empirical apperception. It is this further information which the section on the Schematism of the categories is supposed to provide. Substantially Kant's doctrine is that phenomena are hypostatizations or embodiments of the categories. The latter are pure forms of thought, and as such are incapable of being intuitively and immediately apprehended (since our only faculty of immediate apprehension is sensuous, not intellectual). On this account the material for such embodiment must be sensuous in character, but cannot be the actual data of sense, since these are wholly empirical. Hence it must be provided by time, which, as we have seen in the Aesthetic, is (a) sensuous, (b) pure, (c) the form of all our awareness both internal and external. The actualization of the categories by providing them with a temporal interpretation provides us with a system of rules in accordance with which we must construe the manifold of sense if we are to be able to apperceive it in a unitary consciousness. In other words, we are to be shown the nature of the objective but none the less *a priori* cognizable order of things which we must recognize in order to amplify and harmonize subjective appearances if we are to recognize those appearances (as we are bound to do) as forming elements in a unitary system. Phenomena are nothing more than the pure concepts schematized by the transcendental faculty of imagination, and the world of science is a world of schemata, generated in a sense by our own activity but none the less objective in contrast to the 'subjective play of representations' which makes up our unreflective consciousness. In the principles (Axioms of Intuition, &c.) which follow the Schematism, Kant proceeds to demonstrate (not without some rather arbitrary assumptions) that the categories as actualized by the imagination do supply principles which are required for the scientific interpretation of sense-data and are also essential to the existence of a unitary self-consciousness.

§ 2

Transcendental Schematism (B 176–B 187)

We have now to ask how it comes about that the pure concepts are embodied in and therefore valid of our actual sensuous experience. At first sight this would seem to present no difficulty since, as discursive concepts, they must presumably be expressed in particular instances and be recognizable in those instances just as empirical concepts are. This, however, is not the case, nor could it possibly be so, since they are bare forms of thought which cannot as they stand be said to have sensuous instances at all. This becomes evident when we consider that, even in the case of general notions derived by abstraction from experience, instances must be ideal rather than actual particulars. Their use is to serve as rules enabling us to construct in imagination such ideal particulars or schemata, and it is to these latter that we relate actual perceived particulars and so indirectly bring the latter under concepts. The mediating character of these schemata depends on their participation in both intellectual and sensuous characteristics so that, without being tied down to a single perceived instance, they are none the less sensuous or imaginable.

Now time is the pure form of all our representations, and is also sensuous, not intellectual in character. Hence if we combine each of the categories with this pure form, we shall obtain a set of schemata which will enable us to recognize the manner in which the pure forms of thought are actually exemplified in our experience. For instance, the category of substance is merely the idea of something which is always a subject and never a predicate. But when we temporalize this conception we obtain the sensuous schema of that which is permanent in time or which underlies successive modifications and alterations of accidents, i.e. substance in the ordinary sense. Similarly the category of cause and effect when considered in itself is no more than the bare notion of ground and consequent or implication, whereas its temporal scheme is that of necessary temporal sequence: and so on with the other categories.

§ 3. *Principles of Pure Understanding* (B 187–B 294)*Introduction* (B 187–B 197)

The schemata are too abstract and general to help us to answer

the fundamental question of how a science of nature is possible. For this we need certain specific *a priori* principles which relate to particular representations. We need to be assured that we can recognize instances of the transcendental schemata by means of the faculty of judgement just as we can recognize instances of empirical schemata. This we cannot do directly. We have first to ask ourselves what principles or laws of nature are implied by the various schemata, and to show that these laws of nature are really valid we must confirm them by demonstrating that, unless they are, no unitary experience of nature will be possible for us. For, as we have already seen, the laws of nature which are vital for science are all synthetic, not analytic in character, and whereas the latter can be demonstrated by means of the principle of contradiction, the former can be accepted only when we can show that, unless they are, the existence of a synthetic unity of apperception is an impossibility.

§ 4. *The Principles* (B 198–B 294)

The principles correspond to the divisions of the table of categories as follows:

Quantity. Axioms of Intuition.

Quality. Anticipations of Perception.

Relation. Analogies of Experience.

Modality. Postulates of Empirical Thought.

They are divided into two classes, the mathematical and the dynamical, of which the former are held to possess intuitive, the latter only discursive but none the less apodeictic validity. This classification depends on the distinction between subjective representations and phenomena. The mathematical principles are valid of all appearances without reference to this distinction: the dynamical on the contrary have reference only to the latter, and cannot therefore be proved so easily. The contrast is explained¹ by a comparison of the relation between the two triangles formed by the diagonals of a square with that of the events in a causal sequence. The connexion between the triangles is merely accidental and arbitrary, while that between the events is intrinsic and concerns their phenomenal existence as distinct from a chance juxtaposition for consciousness.

It is further to be observed that the first of the mathematical

¹ B 201 n.

principles actually makes possible those axioms of mathematics which have already been considered and shown to be valid in the Aesthetic.¹

Axioms of Intuition

The principle of the understanding which makes possible the Axioms of Intuition is that all intuitions, empirical as well as formal, are extensive magnitudes, duration in time as well as extension in space being treated under this head. The proof is simply that space and time have been proved independently (in the Aesthetic) to be the forms of all intuition and therefore of all the immediate data of sense, and that to be either spatial or temporal implies quantitative determination. It is all one to say that x is an object of perception (actual or possible) and to say that it is subject to the schematized category of totality (quantity) and as such admits of numeration.

This principle has three consequences:

1. It shows that the synthetic activity of the understanding is the ultimate basis of the intuitional axioms of geometry, since the act of construction to which we attend in order to become aware of the *a priori* character of the latter actually presupposes it, in that it involves the conception of adding part to part to generate a whole,² such as a straight line.
2. It makes evident the principle on which the number series itself is constructed, whereas the Aesthetic was concerned only with particular applications of that series, and the character of their intuitive certainty.
3. It renders the validity of applied mathematics more apparent by demonstrating that space and time themselves as pure intuitions are to be regarded as synthetic wholes, and consequently that events in them must conform to their conditions, and be infinitely divisible, &c.

Anticipations of Perception

In all appearances the real which is the object of perception has intensive magnitude, or degree. For if we concentrate on the matter which is the sensuous content as distinct from the spatio-temporal form of our experience, we find that it necessarily possesses some degree of reality which, since it is not quantitative,

¹ For further consideration of the treatment of mathematics in the Analytic as compared with the Aesthetic, see below pp. 165 ff.

² Cf. A 103.

must be qualitative or intensive in character. Now to regard a quality, e.g. heat, as having a degree of intensity, I must proceed synthetically by progressing from 0° to the degree in question, 0° being the negation of qualitative intensity which is found in the pure intuition which, as barely formal, has no qualitative content. Thus every object of possible as well as actual intuition can be known *a priori* to possess intensity as well as extensity, that is, to have some specific and therefore numerically determinable qualitative reality. This, however, is the same as to maintain that all objects of intuition are subject to the schematized category of quality, since the synthetic activity referred to above is a process which must be conceived as temporal, though we need not maintain that the real which we are considering is itself temporally generated. Thus I need not suppose that the x which I recognize as having a temperature of n° has itself passed through the continuous series of changes from 0° to n° in order to reach that state, though I must myself envisage such a progression in order to conceive it as having the determinate intensity of n° .

The importance of this principle lies in the support which it gives to the theory of the nature of matter (the cause of sense-data in me and of changes in the physical world) which Kant was anxious to maintain as a scientific hypothesis. If it can be sustained, it robs the materialist doctrine that matter is homogeneous, and that particles of it can operate on one another only by impact, of its initial plausibility. For physical reality, *qua* object of science, must be held to be an object of possible intuition (or its laws could not be known *a priori*). Hence it must be subject to the categories, and therefore qualitatively as well as quantitatively determinate. Consequently its qualitative determination might perfectly well lie in its capacity to exert energy, and its substantiality might ultimately be identified with this capacity.¹

Analogies of Experience

The Axioms and Anticipations are really a digression from the central argument of the Analytic as developed in the Deduction and the section on the Schematism of the pure concepts. In the Analogies of Experience this argument is resumed and carried to its conclusion by consideration of the principles derived from the schematized categories of relation, namely substance and attribute, cause and effect, and reciprocal connexion. So far it has been

¹ This is the view maintained in Kant's *Monadologia Physica*. See above, p. 60.

maintained (1) that empirical self-consciousness is possible only as a consequence of a *a priori* cognition of a world of phenomena governed by the categories, (2) that those categories must be given a temporal embodiment as schemata if they are to fulfil their function of making possible the apperception of a sensuously perceived manifold. The purpose of the analogies is to prove that awareness of the self as temporally conditioned, that is as enjoying a temporally ordered experience, requires the existence of a phenomenal world subject to the temporal rules provided by the schematized categories. More fully, Kant is here arguing that I do as a matter of fact recognize myself as having a temporal existence in a world which obeys a time order of its own, and therefore that my cognition of that order must either be derived from my awareness of the sequence of perceptions in my consciousness, or must be antecedent to such awareness and required as a condition of its possibility. But to be aware of an objective order is to be aware of an objective necessity; and this implies the formulation of a synthetic proposition *a priori*. In accordance with the main doctrine of the *Critique*, this can take place only in so far as the connexion of which I become aware has been introduced into the manifold in which I discover it by a synthetic activity of mind. We have then to discover what kinds of temporal determination must exist in nature, that is, be imposed on nature by me in the act of coming to know it, in order to account for the kinds of temporal experience which introspection shows that I actually do have.

It will be generally admitted as a matter of empirical fact that I do experience objects as enduring, succeeding one another, and coexisting in time, and the purpose of the analogies is consequently to demonstrate on the one hand that these empirical distinctions are essential elements in the existence of a unitary self-consciousness and on the other that I could not possibly make them unless I implicitly recognized the existence of a world of phenomena subject to the laws given by the schematized categories.

The general principle of the Analogies is that the thought which makes experience possible is that of a necessary connexion of perceptions. In so far as experience is to be regarded as cognition of objects as distinct from awareness of states of myself, I must conceive my perceptions (which as such are states of myself) as standing in some real order or interrelation which is distinct from

and independent of their juxtaposition in my consciousness. I must, in fact, conceive them as somehow related to objects. All events in my consciousness occur in time since that has been shown to be the form of inner sense, and the world to which my perceptions are to be referred must also be temporal, since the unity of apperception demands that all actual and possible experience should be accommodated in a single time order. We must therefore discover what kind of temporal order must be held to exist in nature conceived as objective but none the less sensuous if we are to explain the coherent unity of our subjective consciousness. That the nature in which such order is to be conceived must be phenomenal in character is evident when we reflect that this is the essential condition of our being able to know it *a priori*; and as the schematized categories provide us with rules for such an order, we have only to show that those rules are the ones required to enable us to refer our perceptions to objects and so render experience possible.

First Analogy

In all change of appearances, substance endures and the quantity of it in nature is neither increased nor diminished: for all change occurs in time and can be perceived only in relation to a permanent which itself does not change. This permanent, however, is not time itself, since time itself is not an object of perception for us. Hence substance is the perceptible permanent which we must have in order to obtain the experience of change and consequently of duration also, and since it is by definition unchangeable, its quantity cannot be subject to increase or diminution. Thus the empirical awareness of duration and change in time without which the unity of self-consciousness would be impossible is found to depend on the *a priori* cognition of an immutable permanent in nature.

Kant proceeds (illegitimately) to identify this permanent with matter, but the real point of the First Analogy is to demonstrate that if we are to discover objective coherence in our perceptions we must regard them as related necessarily to a permanent real. This permanent is to be called substance, but the nature of it cannot be more precisely indicated *a priori*. The question 'What is substance?' must be answered experimentally by the physicist, and all that transcendental philosophy has to say in the matter is that it must be something. The Analogies, in fact, are, on Kant's

explicit statement,¹ to be regarded as regulative, not constitutive in character, and in this connexion it is worth remarking that the details of his exposition and in particular the suggested physical applications of his principles are considerably influenced in the Analogies as in the Anticipations of Perception by his theory as to the actual nature of the physical world.

Second Analogy

Kant's argument here is so dependent for its force on his psychological doctrine of inner sense that no adequate summary is possible. I shall merely indicate the general sense of his discussion and defer serious consideration of it.² His chief contention is as follows. We do actually distinguish between the temporal order of our perceptions, which is accidental and depends largely on our choice, and the temporal order of reality, which is necessary and depends on the nature of things. An instance of the former is our perception of any large object which we cannot take in all at once, and of the latter that of any moving body.

In making this empirical distinction between perceptions whose order is reversible at will and those whose order is independent of our volition, we attribute to the latter succession according to an objective law or rule, and reflection shows that we are bound to do this if we are to give our sensations that objective reference which they must have if we are to regard them as constituting experience. Hence, if we concentrate on that part of our experience which consists of non-reversible perceptions (leaving the others to be dealt with in the Third Analogy), we find that it is a condition of experience that there should be in nature objective succession according to a rule; and this is another way of saying that changes in nature must take place in accordance with the principle of cause and effect.

The implication of this is that the unity of our self-consciousness, as defined in the Deduction, presupposes the existence of an objective causal order, so that empiricists are entirely deluded in attempting to derive the latter from the former. The true situation is that I could not apprehend my perceptions as being mine, that is as together forming a coherent unity (which even empiricists in order to have a view at all must admit that they do), unless I knew of the existence of an objective temporal order to which those perceptions can be related. Their coherence is not intrinsic to them

¹ B 221-2.

² See below, pp. 191 ff.

as such, but is derived from our *a priori* cognition of the phenomena which are their objects.

It is important to notice carefully what this demonstration does not claim to prove. In the case of cause as in that of substance it is completely impossible to formulate any doctrine *a priori* as to the manner in which anything can operate as a natural cause or even as to the kind of thing which is capable of so operating. We can no more say *a priori* what is a cause than we can what is a substance (though Kant himself was convinced on other grounds that the essence of substance was force and that therefore nothing but a substance could actually be a cause).¹ But what we can maintain is that there is some temporal antecedent in nature which stands to any observable change whether physical or psychical in the relation of cause to effect, and this contention is untouched by the objection that in many cases cause and effect are empirically found to be simultaneous, since the order, not the lapse of time, is that with which we are concerned.

Third Analogy

All substances in so far as they can be perceived as coexistent in space are in complete reciprocal connexion; for I do perceive things as coexistent and must do so to render apperception possible. But objective coexistence can no more be inferred from the reversibility of perceptions than objective sequence can be from their irreversibility, but must be apprehended antecedently. Now to apprehend coexistence as objective, that is, as subject to a rule, I must conceive it as involving a necessary connexion between the objects which coexist, though with the same reservations which previously held of substance and causality. I cannot, in fact, determine, *a priori*, how any two objects are reciprocally related, but I can be certain that such relation exists in so far as the two exist at the same time.

Postulates of Empirical Thought

The contents of this chapter are of no great importance since all that is of value in it, including the Refutation of Idealism added in the second edition, is stated elsewhere in the *Critique*. The section as a whole owes its origin to Kant's decision to include the modal notions of necessity, actuality, and possibility among

¹ B 250.

the pure concepts of the understanding, which committed him to an attempt to give them the same subsequent treatment as the other categories. In the nature of the case, however, it is out of the question for him to demonstrate that the existence of the unity of self-consciousness is impossible unless they are embodied in the phenomenal world, and he makes no attempt to do this.¹ On the contrary, he simply shows that for the Critical Philosophy, as contrasted with the Wolff-Leibniz position, nothing but the actual world of phenomena can strictly speaking be called possible and that all events in that world, in so far as they are actual are also necessary. As regards the meaning, if any, which should be attributed to these terms outside the sphere of phenomena, that is, in relation to things in themselves, the Analytic which is concerned only with the possibility of natural science has no concern, and all consideration of this aspect of them is therefore relegated to the Dialectic. The whole discussion could better have been included in the section on the Amphiboly of Concepts of Reflection in which the contrast between the Critical Philosophy and the Leibnizian position is explicitly developed.

The Refutation of Idealism is a condensed restatement of the main contention of the Deduction that consciousness of self depends on knowledge of objects, so that the latter cannot be doubted consistently with the retention of the former. It was included in the second edition as a result of allegations of idealism made by critics of the first edition and adds nothing to the fundamental doctrine.

The Distinction between Phenomena and Noumena

(B 295-B 315)

§ 1

This section, and that on the Amphiboly which follows it, between them develop fully the contrast between the Kantian and rationalist philosophical positions. Indeed, taken together they invite the criticism that Kant is here so much engaged in distinguishing his view from that of the rationalists that he fails to pay any attention to the empiricist doctrines which the *Critique* is equally concerned to supersede, and makes no mention of these except in his casual comparison between Locke and Leibniz.² As against this it may

¹ Causality and probability cannot both be characteristics of phenomena. See below, p. 204.

² B 327.

be urged that the form and language of the *Critique* might conceivably lead the reader to suppose that it was not really so very different from the current modifications of Leibniz, whereas its demonstration of the validity of the pure concepts clearly marked it off from all empiricist speculation. But whether this is so or not, Kant himself clearly felt that it was incumbent on him to lay down once and for all the precise point at issue between himself and the Leibnizians. He does this by expounding in the section on phenomena and noumena what he takes to be the revolutionary consequence of his own view, and exposing in the Amphiboly which follows what he holds to be the cardinal error of Leibniz. Neither section requires any detailed analysis since the thought in both is quite straightforward, though expressed at unnecessary length and with a great deal of repetition.

As far as phenomena and noumena are concerned, little is added to what is contained in the Preface to the second edition. They are not, we are reminded, to be considered as separate entities but as a single reality viewed from different standpoints. The phenomenon is simply the noumenon as it necessarily appears to me under the conditions of sensibility, and the relation of the latter to the former may be compared with the analogous relation between the phenomenon itself and the impressions of a particular percipient under special conditions of light, perspective, &c. In the latter case, we are able by the use of the understanding to correct and amplify our private presentations so as to reach the conception of an object common to all of us. A penny which is, as we say, really round, brown, &c., appears otherwise owing to the special conditions under which we observe it. The crucial question for Kant is whether the general as well as the particular conditions of sense can be discounted so as to give us the conception of the penny as it is in itself altogether divorced from sensibility, and therefore an object for the pure intelligence (*noumenon*). This, however, he holds to be entirely beyond our power, since to know an object *a priori* by means of pure intelligence we should have to form judgements about it and therefore employ concepts. But it has been demonstrated that the pure concepts of the understanding possess validity only in so far as they are schematized, that is, are given a temporal embodiment, so that for us nothing can be cognizable unless it is given (or capable of being given) in sense perception. Consequently the intelligible or noumenal penny is simply beyond the reach of our knowledge altogether. To a being

of a different order from ourselves whose intelligence was intuitive and not discursive in character, this limitation would not apply; but since we can know only by means of concepts combined in judgements, and since these have been shown to have validity only for objects of possible experience, the implied restriction of field is for us absolute and can never be transcended.

In these circumstances it may be asked whether the very notion of a noumenon or object in abstraction from conditions of sense is not worthless and indeed pernicious. This question can be answered only when a distinction has been drawn between two possible meanings which can be given to the term. It may in the first place be regarded as having some positive content, and this is in fact the sense in which rationalist ontology has always employed it. Such a usage is actually illegitimate and disastrous to philosophy, but the manner in which it comes about and the consequences of it are the special subject matter of the Transcendental Dialectic where they are fully treated. Contrasted with this is what Kant calls the negative or regulative employment of the concept. In this sense the noumenon is valuable as indicating the limit of what with our special constitution we are in a position to know. For we can, and as rationalist philosophy shows only too clearly, we constantly do make use of unschematized categories as if thereby we could obtain knowledge of non-sensuous objects,¹ and there is no *logical* objection to our behaving in this way. Thus we can conceive without contradiction the bare category of substance as that which is always subject and never predicate. As we have seen, this category in fact only leads us to knowledge when it is schematized (in the First Analogy). Apart from such schematization it has no object and is a bare *ens rationis*. We can if we like assume that it has an object, such as the human soul considered in abstraction from spatio-temporal conditions and therefore as noumenal. If we choose to do this, our conception of all noumena as beyond the limits of our knowledge will guard us against the errors of rationalism by constantly reminding us that we must now be concerned not with knowledge but with something different, namely belief. This is a perfectly legitimate procedure which also will be further discussed in the Dialectic. All that is here attempted is to determine finally the difference between the two activities since the error of the Leibnizian method lies simply in its failure to draw such a distinction. We must

¹ See below, pp. 135 ff.

discriminate with the utmost care between our capacity to know phenomena (which the Analytic has successfully proved) and our inevitable incapacity to know noumena, remembering that this incapacity is mitigated by our competence to frame ideas which may be valid of them and in whose validity we may therefore believe if on other than purely speculative grounds we find reason to do so. Thus our ideas of things in themselves, since no objects corresponding to them can be given to sense, are problematic in character.

The criticism of the Leibnizian standpoint in the section on the Amphiboly of Concepts of Reflection¹ follows immediately from the exposition of Kant's Critical theory and can be dismissed very briefly, since as soon as the distinction between sense and understanding is drawn in accordance with the Critical Philosophy, the leading notions of Leibniz become evidently untenable. There is, however, no reason to follow Kant in supposing that Leibniz was unaware of this fact, though it will hardly be denied that he paid insufficient attention to the difficulties to which his own position gave rise, especially in the matter of spatial relations.

The important point which emerges from the discussion as a whole is that, on the Kantian hypothesis, the monad of Leibniz simply is the conception of a noumenon. Hence Kant's objection to it is not that it is in any way illogical or contradictory, but rather that it should properly be regarded as problematical only. In this capacity it should be rigidly kept in the metaphysical sphere, and our conception of it should have no place in the realm of physical science except as a purely regulative notion as is explained later in the *Critique*. It is Leibniz's alleged failure to distinguish between metaphysical (or noumenal) and physical (or phenomenal) reality with which Kant is at variance. With the Leibnizian idea of the former he is in almost perfect agreement.

§ 2. *Noumena and Things in themselves*

The distinction drawn in this section between noumena and things in themselves (*Dinge an sich*) is not of any very great importance, and Kant's own use of the terms is somewhat careless. The reason for this carelessness is not difficult to discover. In the nature of the case passages in the *Critique* in which references to

¹ B 316-B 349.

the distinction tend to occur are those in which the rationalist rather than the empiricist element in his thought is dominant, and for rationalism the distinction is actually non-existent. For if we grant (a) the existence of things independent of minds, (b) the capacity of minds to grasp immediately the essential nature of those things, i.e. to know them as they are in themselves, we are clearly bound to identify noumena, as objects of knowledge, with *Dinge an sich*. The *mundus intelligibilis* can therefore be described indifferently as the universe of *objects* of knowledge or as the universe of objects of *knowledge*.

But for Kant in his more critical moments this is not quite adequate. For, although he is prepared to maintain that we can think noumena, that is, frame concepts of things in general or in themselves by means of the pure categories, he is equally bound to maintain that concepts so framed admit neither of deduction nor schematism. Hence it is quite impossible to assure ourselves of the actual existence of objects capable of being subsumed under them, and they must remain wholly problematical in character. Strictly speaking, therefore, the noumenon is the concept of a thing in itself, and the thing in itself is the alleged object of which the noumenon is a concept.

At this point it is easy to see that the term 'thing in itself' as distinct from noumenon is at least very near to becoming empty and meaningless. It can denote merely a 'something, I know not what', an existent with no discoverable predicates. It is from this point of view that Kant sometimes (and most unfortunately) slips into describing it as a transcendental object= x .¹

In these circumstances it is not surprising that many of his contemporaries and successors have urged that in the course of his own philosophical development he has really outgrown the notion altogether. It has become a mere vestigial relic which could be dispensed with to the great advantage of Criticism. The noumenon would then remain as a purely intellectual concept to which nothing in experience corresponds or needs to correspond. It would be a kind of limiting notion required to give completeness to empirical investigation, an idea of reason relating solely to the activities of the understanding and having no object in *rerum natura* at all. It cannot be denied that many passages in the *Critique of Pure Reason* lend colour to the view that this is what Kant actually did think, and many commentators have supposed

¹ See below, p. 177, n. 2.

on the strength of this that the final Critical position is not transcendental idealism but some form of phenomenalism.¹

I believe Kant would have agreed that such an account did justice to his view as far as positive or constitutive thought is concerned. He might perhaps even have accepted it if pure reason had been his only interest, though he would certainly have protested against any dogmatic phenomenalism, that is, against any view which claimed to prove that belief in the existence of unknowable things in themselves was either foolish or unreasonable. But pure reason was not his only interest, and it is clear that, even if he had gone farther than he did in admitting the hypothetical character of *things* in themselves, it was impossible for him without utterly destroying his own theological and moral position to allow the existence of God and of the self as metaphysical realities, even to be called into question. Certainly the evidence for such existence was provided by practical, not pure reason, but it was essential to maintain that the latter at least could not show the beliefs demanded by the former to be logically untenable. Now the arguments against the existence of God and the self are from Kant's point of view at least as strong as those against the existence of non-empirical objects, and it is therefore not surprising that his belief in the latter was rather more lively than strict logic required. In addition to this, however, his historical approach to the problem of noumena and phenomena made it natural for him to take a somewhat different view from that of his critics, and, as it seems to me, allowed him to avoid at least one trap into which both Berkeley (as Kant understood him) and Hume had previously fallen.

As we have seen already, Kant took for granted as his starting-point the existence of a plurality both of selves and of objects. His inquiry in the *Critique of Pure Reason* was into the nature and extent of the knowledge which the former could have both of the latter and of themselves. His conclusion was that knowledge was possible *a priori*, not of objects or of selves as such, but only of them as appearances in space and time. The question then becomes, 'Should he, on reaching this conclusion, have admitted that his initial assumption was incorrect?' This, after all, is what Berkeley had previously done as regards physical objects (though his notion of God as the ultimate ground of sense-data made his

¹ Cf. especially the views developed in Prof. Norman Kemp Smith's *Commentary* and in Cohen, *Kant's Theorie der Erfahrung*.

final position more Kantian than is sometimes recognized), and Hume had enlarged his scepticism to include the self. The difficulty to which this procedure gives rise, especially in the case of Hume, is that of seeing how, without the initial assumption, it would be possible to state a view at all. And therefore, it is at least plausible to maintain that both Berkeley and Hume succeeded in destroying their own positions by arguing as they did.

As far as the case for the self is concerned, it should, I think, be admitted as certain. Indeed the argument here may well be stronger than Kant's psychological view permitted him to maintain that it was. The non-empirical object, however, provides a much greater difficulty, which is actually increased by Kant's use of his own terminology. Unquestionably he maintained (as Adickes¹ and others have pointed out) that things in themselves and phenomena cannot properly be regarded as separate entities such that the existence of the one needs to be inferred from that of the other. In this sense there are no *Zwischendinge*. There is one universe only and not two. But, on the other hand, he was anxious to insist on the important difference between things as they are in themselves and things as they appear to us because this was the essential point on which he diverged from the Leibnizian school of thought. Hence he does sometimes talk as if there really were two distinct worlds. But surely if he had anticipated the difficulties of Jacobi² and other later critics he might have stated his own case more or less as follows. It is presumably not disputed that there is a distinction between subject and object; between that which apprehends and that which it apprehends. What we have to ask is, 'How much can legitimately be asserted by the former about the latter?' Hume's answer to this question is, 'Nothing except *de facto* conjunctions between *sensa*'. This, however, can be refuted by the argument of the Deduction which proves that such conjunctions never could be asserted at all without previous knowledge of a world ordered in space and time. But to assert the existence of such a world as ultimate can do no more than leave us in the position of Berkeley, without Berkeley's God, since the Antinomies preclude us from accepting the spatio-temporal as a final account of reality. Hence we are driven a stage further and constrained to regard the object as non-spatio-temporal. But if it is that, then, by the whole argument of the Aesthetic and

¹ Adickes, *Kant und das Ding an sich*.

² Vaihinger, *Commentar*, vol. ii, pp. 36-8.

Analytic, no synthetic propositions can be formulated about it either *a priori* or *a posteriori*, and we can therefore have no knowledge of its properties or relations.

Can we, then, know that it exists? This must surely be an idle question, since the existence of *something* is a necessary assumption without which discussion cannot begin. If Hume were right and *sensa* with their relations were all that we could know, then these would in fact be reality, i.e. things in themselves in Kant's sense.

It is difficult, however, to see that Kant would have had any very satisfactory answer to make to Berkeley had he understood the latter's position properly and not merely from inadequate summaries.¹ For he could not deny that, in the light of his own conclusions, reality might be entirely spiritual in character, though he could have refuted Berkeley's case for saying that it must be so.

Thus Kant's contention that reality is ultimately unknowable rests in the end on the argument of the Deduction and the Antinomies, and unless this is either rejected or superseded (as Hegel maintained that it must be) he seems to be entitled to his view that the nature of things in themselves inevitably remains for us a matter of belief, not of scientific metaphysical knowledge.

TRANSCENDENTAL DIALECTIC (B 350-B 732)

The purpose of the Dialectic is to answer the remaining questions which Kant has laid down as falling within the scope of the *Critique of Pure Reason*, namely (1) how is metaphysics possible as a natural disposition, that is, how do the transcendent ideas of God, freedom, and immortality come to be present to our minds at all? and (2) how is metaphysics possible as a science? that is, granted that we do possess such ideas, are we in a position to obtain knowledge *a priori* of the realities for which they stand? The investigation of these problems is pursued as far as possible along the lines laid down in the Aesthetic and the Analytic. The Aesthetic dealt with the transcendental implications of sensibility, the Analytic with those of the understanding regarded as the faculty by which we apprehend phenomena discursively by means of concepts connected so as to form judgements. Hence it remains for the Dialectic to complete the scheme by examining the transcendental implications of inference, which is the province of reason in the narrowest or purely logical sense.

¹ See above, p. 9.

Without entering here into the whole question raised by Kant's addiction to architectonic, we may safely say that the division of the *Critique* which results from his attempt to distinguish between reason and understanding is extremely arbitrary. It is at once evident that the possibility of inference has in fact been one of the major points considered in the *Analytic*, and that the second of Kant's remaining questions, in the form in which he states it, has been ruled out as meaningless by the distinction between phenomena and noumena. For by demonstrating that neither the forms of sense nor the categories, by means of which alone we can conceivably have *a priori* knowledge of objects, are applicable except to phenomena, he has already proved that metaphysics, as the study of the super-sensible by pure reason, cannot possibly be scientific in character. In addition to this his metaphysical deduction of the ideas is extremely unconvincing. The ideas which are peculiar to pure reason and discovered by consideration of the syllogism, as the pure concepts were discovered by consideration of the judgement, are even more dubiously connected with their counterparts in general logic than are some of the pure concepts with the logical forms from which he claims to deduce them.

Kant's general position is as follows. The syllogism, as expounded in formal logic, is, like the judgement, a form of thought, and the traditional classification of syllogisms into categorical, hypothetical, and disjunctive, like the traditional table of judgements, must be accepted as exhaustive and final. It will naturally be observed that here, as in the former case, he assumes a considerable right of adaptation as regards the traditional view by ignoring all forms of categorical syllogism except the first mode of the first figure (*Barbara*). He could, however, have defended this by reference to his early work on the *Mistaken Subtlety of the Four Syllogistic Figures*, in which he claimed to show that *Barbara* alone is the form of genuine categorical syllogisms.¹ He further maintains that as each form of judgement implies the apprehension by us of a pure concept, so each form of syllogism implies the apprehension of a pure idea. These ideas, however, differ from the pure concepts in that they are notions not of different kinds of relation but of different kinds of totality or wholes of relations. The ideas are thus notions of totality or absolute completeness, which are concerned not directly with things but rather with the procedure by which the understanding leads us to a knowledge of things.

¹ See above, p. 58.

The object of reason is thus the understanding, and the aim of reason is to provide principles or absolute starting-points for the employment of the understanding. It is only in the case of the categories of relation that such principles can be needed, and therefore we find that in respect of each of them there is a transcendental idea of totality. The categorical syllogism (corresponding to the category of substance and attribute) yields the idea of a subject (which is never a predicate) conceived as absolute unity: the hypothetical syllogism (corresponding to the category of cause and effect) that of a cause which is not itself the effect of any more ultimate cause; and the disjunctive syllogism that of an absolute unity of all conditions or unconditioned unity of an organic whole.

It is unnecessary to inquire further into this deduction which serves no purpose but to introduce confusion into Kant's subsequent inquiry into the ideas of God, freedom, and immortality. The only ideas in which he is interested are those of a first cause and a self-existent substance, and these might equally well be considered as arising from the false hypostatization of the pure concepts of cause and substance without any reference to the syllogism at all.

If, however, we grant the soundness of the method by which he derives the ideas, he may be supposed to have provided a metaphysical deduction of them parallel to that given of the pure concepts of the understanding. And if we further agree that the idea of an absolute subject which is never a predicate can be identified with that of an immortal soul; the idea of a first cause with that of a free-will; and the idea of an absolute totality of conditions determining an organic whole with that of God, then he may be said to have shown how the ideas of these realities are involved in the form of our inferential thinking. But even if these rather surprising conclusions were accepted, it would still be necessary for Kant to provide a transcendental deduction if he were to demonstrate that the ideas were necessarily ideas of things and not merely part of the machinery of the mind. In his own terms, his argument from the nature of the syllogism could never do more than show how metaphysics was possible as a natural disposition. It would remain to show how it was possible as a science, and it is precisely this which he holds to be out of the question, since the entities which can alone correspond to those ideas are by definition things in themselves and not phenomena. Consequently his

treatment of the ideas falls into two sections, as anticipated in the concluding sections of the *Analytic*, namely

- (1) the Paralogisms, Antinomies, and Ideal of Pure Reason, B 397-B 670;
- (2) the Appendix to the Dialectic, B 670-B 697.

The former are almost entirely destructive. Kant amplifies the proof already given that noumena cannot be objects of knowledge to us by exposing the fallacies in the existing rationalist philosophy which lays claim to such knowledge. His central argument here is that men have discovered the pure ideas as part of the 'furniture of the mind' and have assumed without question or warrant that these ideas possess the same kind of objective reference as do the pure forms of space and time and the pure concepts of the understanding. They have therefore postulated the existence of objects corresponding to those ideas and treated these empty hypostatizations as facts from which valid inferences can be drawn in the phenomenal world. Such a procedure is illegitimate, since the forms of the mind can be accorded objective validity only when this is an indispensable condition of the possibility of experience. No attempt, however, has been made to show that this condition is satisfied, and indeed it evidently is not, since we have already found that unity in terms of space, time, and the categories is all that is required to render experience of objects and therefore self-consciousness possible.

Kant is not satisfied, however, with this general attack on rationalist methods in metaphysics. He prefers a detailed refutation of the pseudo-sciences to which these methods give rise. Rational ontology has been already eliminated and replaced by the *Analytic*. Rational psychology is dealt with by the Paralogisms, rational cosmology by the Antinomies, and rational theology in the Ideal of Pure Reason.

This disposes of the illegitimate use of the ideas and incidentally, answers completely the question, 'How is metaphysics possible as a science?' Hence Kant is constrained to deal with the proper employment of the ideas in the Appendix to the Dialectic as if it were a relatively unimportant afterthought. As his doctrine in this matter anticipates virtually the whole of what he has to say in the *Critique of Practical Reason* and the *Critique of Judgement*, it is unfortunate that his original formulation of his problem should have led to such an arrangement.

It is not necessary to anticipate here Kant's constructive

treatment of the employment of the ideas except in so far as it is implied by his method of discovering them. Since they are on his view the necessary presupposition of our employment of syllogistic reasoning, they can hardly be regarded as mere *entia rationis* which have no purpose whatever but are simply possible sources of illusion. The clue to their legitimate use is provided by the conception that reason has as its aim the unification not of objects for consciousness but of the operation of the understanding itself. Like the concepts of the understanding they are functions of unity, but the unity which they postulate is subjective. It is an ideal unity of consciousness at which we ought to aim, and is therefore of a higher order than, though not inconsistent with, the *de facto* unity which the Analytic has demonstrated. Our natural desire to find in phenomena the type of unity required by the ideas is thus one which we may properly gratify only in so far as this does not involve any conflict with the unqualified validity of the forms of sense and understanding in respect of phenomena which the Analytic has shown to be necessary to our existence as self-conscious beings. It remains to be seen whether we can afford this gratification or not.

Paralogisms of Pure Reason (B 399-B 432)

Rational psychology claims to expound the nature of the soul or self in so far as this can be done by pure reason alone. Its central doctrine is that we are in self-consciousness aware of the thinking self as (1) always a subject and never a mere predicate of something else; (2) simple, since if we abstract from the content of thought, the bare *I* which remains contains nothing complex; (3) self-identical in time; (4) self-existent, that is, existent independently of and in complete distinction from the things which are its objects. Now if these propositions are true they would enable us to infer the immortal nature of the soul, since a simple substance is by definition indestructible except by miraculous annihilation. Furthermore, such a demonstration if allowed to be valid would be absolutely fatal to the Critical system, since we should be then driven to admit that in one vital instance at least it is possible for the human mind to know by reason alone and without sensuous experience that something (the soul) is a substance, whereas the argument of the Analytic conclusively proves that nothing but experiment can ever settle such a question. It was proved (in the First Analogy) that while we know *a priori* that there is substance,

the discovery of what is substance must be left to the scientist, who in any case cannot even hope to settle the matter except in respect of phenomena; but this rationalist proof claims validity of something which is not a phenomenon since it is considered without reference to the conditions under which we are conscious of it.

This claim, however, when we consider it further, serves to refute the contention of rational psychology and to restore our confidence in the Analytic. For rationalism in its argument is guilty of a logical fallacy or paralogism, namely that of a *quaternio terminorum* or ambiguity of one of the terms which it employs. What it does is to take the purely formal or logical unity which certainly can be discovered in all acts of consciousness and then treat that formal unity as something given to consciousness. To do this, however, involves a natural but fallacious identification of two entities which are not properly to be regarded as identical at all, namely the subject and object selves as revealed by self-consciousness. Of these the former is indeed actual but entirely undetermined. It is barely formal in character and possesses no predicates. Just because it is the indispensable logical subject of all judgement, it cannot itself be thought in terms of the categories at all, and to say that it is substance, simple, &c., is merely a misleading way of stating a tautology. We can certainly maintain if we want to that it is not predicate, not complex, and so on, but this gets us no farther. All we are entitled to say is that it is just not an object of thought. What deludes us is the existence of the object-self, that is, of the complex of emotions and feelings of which we do think as a unity by means of the categories. That self, however, quite apart from the fact that it is given only in experience and has no existence apart from such experience, so that it is not the self of which rational psychology claims to treat, is essentially temporal and therefore impermanent and unsubstantial in character. Nothing but our *a priori* awareness of a world of permanent things enables us to recognize it as a unity.

Thus the attempt of rationalism to discover in the soul an object to correspond to the pure idea of an absolute subject is a failure, and we may note that even if it were a success it would commit us at least to a problematic idealism as regards the existence of objects by rendering the latter less certain than, and therefore only to be established by a doubtful inference from, the former as Descartes was constrained by his argument to do.

The whole proceeding, however, is now shown to be invalid and

to depend in the end on a false hypostatization in that when we identify the purely formal or logical self with the self as object of actual consciousness we improperly endow the former with an intuitable existence in time which, if legitimate, would render it an object of experience and therefore knowable in terms of the categories. We then treat it as if it were thus knowable and formulate of it the *a priori* synthetic propositions that it is substance, simple, and so on. As soon as the fallacy is discovered it is evident that all these propositions are either tautologous or false, and that the immortality of the soul is not demonstrable *a priori*. This is not a very serious discovery, since we now see that its mortality could only be proved by an argument equally fallacious, and consequently the purpose of the *Critique* which is to remove knowledge to make room for faith is so far successfully achieved.

Antinomies of Pure Reason (B 433–B 595)

By an antinomy Kant means a pair of propositions called Thesis and Antithesis each of which can be supported by a formally valid argument but which are none the less inconsistent with and indeed diametrically opposed to one another ('Matter is infinitely divisible' [thesis] as opposed to 'Matter is composed of parts which are indivisible' [antithesis]). The section consists of two parts:

1. A demonstration in accordance with the architectonic of the *Critique* that there are necessarily four of these antinomies and four only, followed by a formulation with comments on each pair. The number is supposed to depend on the four headings of the categories, and the four are further divided into two groups of two each, called mathematical and dynamical. B 433–B 490.
2. A consideration of the origin of antinomies in human reason and of the solution of them by the Critical hypothesis. B 490–B 595.

1. The first of these sections is lengthy, complicated, and arbitrary. It has little but historical interest and is quite unessential to the important doctrine which follows it, but the inclusion of it in the *Critique*, and the importance which Kant obviously attached to it are easy to explain.

The mathematical antinomies and their solution by the Critical doctrine of the transcendental ideality of space and time had formed the central theme of the *Dissertation* of 1770, and the *Critique* had first been conceived as an extension of the

Dissertation. But years before the *Dissertation* was written the existence of these contradictions, as shown by the controversies of contemporary physics, had seemed to Kant a scandal to philosophy, and was largely responsible for turning his thoughts into speculative channels. Thus it is reasonable to suppose that in course of time they came to have for him an importance which was disproportionate to their relevance to the mature Critical system. A further complication arose because of Kant's decision to combine them with the conflict between free will and universal causal necessity in the section of the *Critique* designed to refute the pseudo-science of rational cosmology: and confusion is made worse by his invention of a fourth antinomy which is nothing but an inadequate version of his subsequent treatment of the Ideal of Pure Reason which follows it.

In view of this it is simply not worth while to examine the arguments of the theses and antitheses in detail in order to determine whether they are actually valid or mere pretences of demonstration. It is more profitable to omit them altogether and to pass immediately to the second section, in which the general difficulty is discussed and Kant's solution of it propounded.

2. The four antinomies with which as a whole we have now to deal are as follows:

	<i>Thesis</i>	<i>Antithesis</i>
Mathematical	(a) The world has a beginning in time, and in respect of space is enclosed within limits.	The world has no beginning, and no limits in space: it is infinite in respect both of space and time.
	(b) Every composite thing in the world consists of simple parts and nothing anywhere exists except the simple or that which is formed by composition of it.	No composite thing in the world consists of simple parts and there exists nothing simple anywhere in the world.
Dynamical	(c) Causality in accordance with the laws of nature is not the only causality from which the phenomena of the world as a whole can be derived. It is necessary further to accept a causality by freedom as an explanation of them.	There is no freedom, but everything in the world happens simply according to laws of nature.
	(d) There belongs to the world either as part of it or as its cause an absolutely necessary being.	There exists nowhere an absolutely necessary being either in the world or outside it as its cause.

It is immediately clear Kant considers that the theses are the *a priori* contentions of rationalist cosmology, while the antitheses represent the empiricist attack on it and also that the truth of the theses rather than that of the antitheses is desirable both on practical and speculative grounds. For the theses, in so far as they are true, involve the existence both of God and of a moral capacity in man, both of which are by implication denied by the antitheses, and in addition they hold out the prospect of final answers being given to the problems of natural science which equally is denied by the antitheses, since these involve us in a series of infinite regresses. Hence it is not to be wondered at that the rationalist position has a wider popular appeal than the empiricist, though this by no means implies that it is philosophically sound. Indeed, on the strength of the Analytic it may be argued that in this respect empiricism has the stronger *prima facie* claim, in that it adheres firmly to the established principles of sense and understanding and nowhere admits any argument based on the mere ideas of entities which can never be given in experience. This would indeed be the case if empiricism rested satisfied with the refutation of dogmatic rationalism, but it frequently goes far beyond this (as in the antitheses) and claims to formulate an equally dogmatic theory of its own by denying that the ideas which the rationalist has erroneously attempted to introduce into natural science can possibly have any objective reference or relevance at all.

The function of a genuine philosophy is to preserve what is true in both views and to show how, by means of the Critical hypothesis, the practical merits of rationalism can be reconciled with the claim of empiricism that its principles are the only sound basis for natural science. It may, however, be objected that this cannot be done, since the cosmological problems involved are of such difficulty that no solution of them can be attained by human reason. This objection is invalid, and against it we may assert that the questions concerned must be answerable since they arise simply out of the nature of that reason and are not given to it from some other source (which would justify the assertion that the investigation of them is necessarily an empirical matter). They are thus on the same plane as the problems of morals and mathematics, to which it is evident that an answer must be given by reason, even though in some cases that answer consists in demonstrating that the question itself is meaningless and ought never to have

been asked. That this is the case becomes apparent when we consider that what we are concerned with in the cosmological question is not something to do with an object (whether phenomenal or noumenal in character) but is simply the possibility or impossibility of completing a particular series. For this conception of completeness (in the spatial, temporal, or causal series) is clearly a notion which reason produces for itself and the existence of such completeness, even if it were a fact, could never be determined empirically. Equally clearly, the existence or non-existence of the final terms which such completeness requires is scientifically of no interest or importance and consequently no transcendental deduction of it can even be contemplated.

Before we give a Critical solution of these cosmological questions it is as well to observe that neither the dogmatic affirmative nor negative offered by the theses or antitheses would really be tolerable even if it could be substantiated, for this will reconcile us to the necessarily inconclusive character of the Critical inquiry. Any such answer would prove to be either too large or too small to admit of reconciliation with any concept of the understanding. For it must be remembered that the empirical regresses with which the cosmological ideas deal are conceived by both parties to the dispute as being themselves objects of possible experience and therefore cognizable by the understanding. But it can be confidently asserted on the one hand that the understanding can frame no concept of an infinite series of places or events as an actual empirical object (since nothing of this nature can possibly be given in experience), and on the other that it is equally incapable of conceiving a last term in any such empirical series without falling into contradiction. The former is in fact too large and the latter too small to be reconcilable with the principles in accordance with which the understanding must conceive empirical reality. Hence there is a *prima facie* case for supposing that the cosmological questions are unreal and are propounded only as the result of a misunderstanding of the proper function of the ideas of reason. That this is indeed the case becomes clear in what follows.

According to the Critical Philosophy, space and time and the substances in them which causally determine one another are all alike to be regarded as appearances and not as things existing independently of all experience, and the empirical system which they constitute is to be regarded as a representation of things in themselves, which has no existence except for consciousness.

Hence the assertion that a certain object remote from me in time or space is actual can mean only that I find it as a member of a series of possible experiences which the understanding postulates as a condition of the unity of my actual present experience. This distinction between phenomena and noumena provides the key to the solution of the cosmological problems. Phenomena and the space and time which are their forms are not things in the absolute sense of independently real existents, but only objectively determined appearances of such things. Now the assumption made in the formulation of the cosmological problems is that if the conditioned is given, the complete series of all its conditions is given too; and as far as metaphysical substances, or noumena, are concerned, this is merely an analytical proposition; but as regards appearances the situation is entirely different. All that we can properly maintain of these is that they occur in a necessary order which is spatial, temporal, and causal, and that in those series we must always take for granted the existence of a further term which it is our task to discover. This suggests that the arguments of the antitheses are in fact justified and that the world as appearance must be regarded as infinitely divisible and extended, but the suggestion is misleading. The doctrine of the antitheses is that a part of matter consists of an actually infinite number of independently real parts, whereas the Critical doctrine is simply that the process of division can be carried on indefinitely, but that the possibility of this indefinite regress does not presuppose the actual existence of an infinite number of independent reals, since the process itself deals with phenomena, not noumena. Hence the statement that a particular member of such a series is actual means simply that it is either met with in experience or is implied by something else which is.

The error which underlies the formulation of the cosmological problems is indeed identical with that involved in the paralogisms, namely an ambiguity due to a failure to distinguish between propositions which relate to things in themselves and propositions which relate to phenomena.

As contrasted with this illegitimate or constitutive use of the notion of a totality of conditions, there is a legitimate or regulative employment of it on which a critical philosophy must insist. In this sense it provides a rule for the guidance of the understanding in its investigation of phenomena, forbidding it to regard any actually discovered term in an empirical regress as being actually

the last of the series. Any such claim can be shown to conflict with the demand of reason for an absolute totality. This does not necessarily imply that there never can be such a last term (e.g. in the series of a given man's ancestors), but that the understanding by its very nature could never recognize any empirical member as being such a last term, and would therefore still be constrained by reason to look for a further one.

This statement of the regulative function of reason is an anticipation of the fuller formulation which is given later.

The general solution offered above is now applied in greater detail to the four antinomies, but as far as the first two (the mathematical antinomies) are concerned, nothing is thereby added to what has already been said. The regulative function of reason in demanding that investigation shall never stop short of attaining to the ideal of a totality conceived *a priori* by reason (even though this ideal can never actually be achieved) is further emphasized, and a distinction is drawn between those empirical series in which we are certain *a priori* that however far we proceed with our empirical analysis there will always be another term for us to discover (of which an example is provided by the divisibility of matter), and those in which we are bound to look for such a term even though none may exist; for even if the term which we have reached is actually the last, we can never know this and are therefore bound to search for another (as in tracing the origin of the human race). This distinction is of dubious validity and no importance. In fact these solutions of the First and Second Antinomies are probably included only for the sake of symmetry, since they are entirely subordinate to the discussion of the Third Antinomy which follows them. This section of the *Critique*,¹ containing as it does all that is essential in Kant's ethical doctrine, is so fundamental to his system as a whole that it requires to be dealt with in greater detail² than is desirable at this point. It is not entirely consistent with itself and involves several points which are difficult to interpret satisfactorily, but the main contention which Kant hopes to prove is clear and can be given at once.

Our conclusion in respect of the mathematical antinomies is that both sides in the dispute are correct in denying the dogmatic assertions of their opponents, but wrong in attempting to demonstrate their own counter-proposals. The position as regards the dynamical antinomies is somewhat different, for here we shall find

¹ B 560-B 593.

² See below, p. 199.

that the legitimate demands of both parties can be met as soon as we properly understand what those demands really are. The conflict in fact is between the claim of the scientist that all natural events must be explicable by natural causes and that of the moralist that unless human action is spontaneous (and therefore undetermined by natural causes) the conceptions of obligation and desert become entirely without meaning. Both these assertions are indisputably correct. The first has already been demonstrated in the *Analytic* and the second is obvious as soon as it is stated. What Critical Philosophy claims to do is to show that the conflict between them is only apparent. For this purpose it is necessary to remember that the distinction between phenomena and noumena holds of selves as well as of objects. Now the whole teaching of the *Analytic* assures us that the phenomenal self, like the phenomenal world of objects, is subject to the conditions of the categories and therefore causally determined, and from this conclusion there can be no retreat without sacrificing everything which the *Critique* maintains. The self, considered as the object of empirical psychology, must be conceived as determined in every detail, and, even where we are prevented by its complexity from empirically predicting its behaviour, we are bound to hold that such behaviour is in principle as predictable as the movements of the planets. The antithesis of the Antinomy is therefore entirely correct in its assertion that human behaviour as an object of possible experience must be causally determined and admits of no spontaneity whatever. What it fails to notice is that the causal sequence in phenomena as a whole (and therefore in the empirical self as part of that whole) is a relation between appearances and not between things in themselves, and is therefore determined as a whole by the noumena which it represents. Of these noumena (including the noumenal self) we can say nothing positive since they are *ex hypothesi* not subject to the forms of sense and understanding, but this very fact enables us to maintain that they are not subject to the causal law, or even to the limitation of time. Hence the thesis of the antinomy is also justified provided that we understand exactly what it is maintaining. There is of course no question of regarding the noumenal and phenomenal selves as different entities of which one can determine the other in the sense of acting causally upon it. The noumenal self is not to be conceived as interrupting or breaking in upon the chain of natural causes which determine the phenomenal self. All that is argued is that the phenomenal or

observable character of anyone is what it is because of the noumenal character of which it is the temporal (and therefore causally determined representation). This being the case, we are in a position to infer (though never with certainty) the real merit or guilt of a person from his observed behaviour in a manner analogous to that in which from our private empirical representations we infer (with certainty) the objective though phenomenal constitution of an empirical object. Our moral judgements must always be problematical since the transcendental subject to which alone they can have any reference is not given to us as an object but is only conceived as possible by means of an idea of pure reason. To apprehend it as an object we should require that capacity of knowing by means of an intellectual intuition which we do not possess.¹

The solution of the Fourth Antinomy requires no consideration. It merely anticipates the discussion of the Ideal of Pure Reason and has nothing but considerations of architectonic to justify its inclusion at this stage.

Ideal of Pure Reason (B 595-B 620)

The section on the Ideal of Pure Reason resembles that on the Paralogisms in that it begins with a complicated but unimportant piece of architectonic. The aim of this is to demonstrate that God, the subject of study in the third great rationalist science of rational theology, is to be identified with the *ens realissimum* or absolute first cause of all existence; and further that the idea of such a first cause can be shown to arise naturally in our minds as being the presupposition of our employment of the disjunctive syllogism. This leads to the consideration of the traditional proofs of God's existence which can be represented as attempts to deduce or provide an object corresponding to the idea of pure reason, though such examination is really quite unnecessary in view of the preceding proofs that all attempts to provide objects for such ideas are void *ab initio* owing to the restriction of our knowledge to the sphere of phenomena. Kant, however, aware that he had something important (though not very original) to say in respect of these proofs, decided to include this in the *Critique* in spite of the fact that he had already shown all discussion of such proofs to be superfluous.

¹ Further treatment of this view involves consideration of Kant's doctrine of inner sense and is therefore postponed to Part III. See below, pp. 198-203.

Rationalist Proofs of the Existence of God (B 620–B 670)*The Ontological Proof*

The ontological argument is too well known to require stating in any detail. With unimportant variations in different writers it depends ultimately on the proposition that in the case of God only it is legitimate for us to argue from our possession of a concept to the existence of an object corresponding to that concept. For God is conceived in Cartesian terminology as the absolutely perfect being, and by Kant, following Leibniz and Wolff, as combining in Himself all positive predicates. In either case it may be argued that as such He possesses existence as part of His essence and that therefore He exists of necessity.

Kant's refutation is as follows:

The nerve of the ontological argument is its contention that existence, in so far as it belongs necessarily to the concept of God's essence, cannot be denied of Him without a violation of the principle of contradiction. To deny it would be as illogical as to deny that a triangle has three angles or that body is extended. This is certainly a plausible view, but it fails to take note of a vital distinction between the two cases. Certainly it must be admitted that it belongs to the essence of a triangle to have three angles and of body to be extended, and therefore these predicates cannot be denied of them without contradiction; but equally clearly it is possible for me to deny the existence of any object corresponding to the concept under consideration, and if I do this, I annihilate at the same time the reality of that concept's implications. If no objects correspond to the concept 'triangle' and 'body', then analytical propositions derived from those concepts are likewise empty. This amounts to a denial of what is assumed in the ontological argument, namely, that existence can be called a predicate or form part of my concept of something in the same way that extension does. This assumption alone justifies the view that denial of existence which is logically possible in respect of bodies and triangles is impossible without contradiction in the case of God. But Kant does deny, as on the Critical hypothesis he is bound to do, that existence can conceivably form part of my concept of anything, for he is committed to the view that for us at least existence or actuality has no determinate meaning except in relation to possible experience, that is ultimately to sense perception. Hence to assert of anything that it exists is for him to

formulate a synthetic proposition. To establish this view more firmly (though it has already been proved in the Postulates of Empirical Thought and tacitly assumed throughout the Dialectic) he points out that existence cannot be regarded as a predicate since it adds no new determination to any concept. There is no difference whatever as far as predicates are concerned between a hundred real thalers and a hundred imagined thalers, and to suggest that there is implies merely that the concept is imperfect. The 'reality' of the real thalers lies in their synthetic connexion with actual or possible experience, not with anything which can be discovered by analysis of concepts.

Thus if the existence of God is to be proved at all, it must be shown to be a condition of possible experience, that is as synthetically connected with our actual perception of phenomena. It can never be demonstrated by pure reason alone.

The Cosmological Proof

The cosmological proof is the scholastic offspring of Aristotle's demonstration of the existence of a necessary first cause, and is otherwise known as the proof *a contingentia mundi*. It argues from the conditioned and therefore contingent character of all observed phenomena to the existence of an absolute or uncaused cause, and is not actually distinguishable from the argument contained in the thesis of the Fourth Antinomy.

It has a *prima facie* advantage over the ontological proof in that it takes its start from an admitted fact, namely the contingency of the given, but Kant finds no difficulty in demonstrating that this advantage is merely superficial. His refutation is an application of what he holds that the section on the Antinomies has already demonstrated, namely that the concept of a first cause as itself a term in the phenomenal series is not required by and is even inconsistent with the demands of the understanding; whereas the postulation of it as outside the series is the postulation of the existence of a determinate thing in itself. But the thing in itself cannot be known (since it cannot be given in sense perception), and therefore its existence can never be demonstrated synthetically. Hence the demonstration of the existence of a transcendent first cause can be achieved only by pure reason, that is by falling back on the ontological argument which has already been discredited.

The Physico-Theological Proof

This demonstration, which is better known as the teleological proof, had always made a great appeal to Kant and he treats it with far more respect than he does the ontological and cosmological arguments. It is actually the common argument from design, and maintains that the observed fact of orderliness and purpose in nature proves the existence of a divine artificer. But although Kant regards it as persuasive and practically valuable since it appeals to the plain man to an enormously greater extent than the scholastic arguments already disposed of, he has no difficulty in showing that as a demonstration it suffers from exactly the same defect as they do. For even if it is allowed that observation of the wonders of nature tends to generate in me the concept of an omnipotent architect of the universe, it is still necessary to show that this concept has an object corresponding to it; and this I cannot do without surreptitiously introducing the discredited ontological argument from concept to existence. I can never demonstrate that the order and apparent purposiveness of nature could not be the result of ordinary causal laws,¹ or alternatively that they do not represent noumenal agencies which are unknown to me and which cannot be identified with my concept of an omnipotent deity.

In conclusion Kant again points out that this refutation of the ambitious claim of dogmatic theology to demonstrate the existence of its object has no tendency when properly considered to upset man's faith in the existence of God. On the contrary, the Critical Philosophy renders such belief obligatory on moral grounds, though it must be admitted that speculative proof is out of the question. The function of our idea of God as an object of speculative inquiry, is to be regarded like that of freedom as regulative and not constitutive in character, and we are thus led to consider more carefully in the following sections the character of this regulative employment.

Regulative Employment of the Ideas (B 670-B 732)

§ 1

To complete the Dialectic it is necessary to develop further what has already been said of the legitimate or regulative employment

¹ See below, p. 137.

of the ideas. That such employment is possible can hardly be doubted when we consider that they arise in us from the very nature of our capacity to reason and therefore it would be intolerable to suppose that they are necessarily empty and misleading.

We must first remember that reason is not, as concepts are, related directly to objects, but that its function is rather to order those concepts themselves and connect them by its inferential process with one another. By so doing it introduces unity into a manifold not of things but of concepts, and its final objective may be regarded as the complete unification of the processes of the understanding. The unity at which reason aims, however, differs in a vital respect from that which is effected by the understanding. The latter is an immanent unity brought about in our experience, whereas the former is ideal and transcends experience. It is rather to be conceived as an imaginary point on which actual lines of investigation converge but which they never reach¹; and the fallacies which have been considered in the *Dialectic* are then due to the mistaken assumption that the convergence is completed. Reason indeed aims always at complete systematization; it seeks to make explicit the interrelation of parts in conformity with a single principle, and thus presupposes the ideal form of a completed whole of knowledge which precedes a determinate knowledge of the parts. It demands that knowledge gained by the understanding should be perfectly unified so as to constitute a system, not a mere aggregate of propositions. On the other hand, this systematic unity must never be conceived as given prior to detailed knowledge of the parts which constitute it, but simply as a project to be carried out or a problem to be solved. Thus it is proper for empirical investigation in the light of reason to aim at the conclusion that all mental processes are ultimately to be regarded as manifestations of a single fundamental power (e.g. the *vis representativa* of Baumgarten), but it is fallacious to posit such a power as actually existing. It is to be treated as the aim of our empirical inquiry, not as a datum for use in that inquiry. It must not, however, be supposed that such ideas when conceived as regulative are mere luxuries from the point of view of empirical investigation. On the contrary, they are essential to the effective employment of the understanding, as will shortly be apparent. For if we consider the three fundamental heuristic maxims formulated by logic for the direction of empirical research, we find that each of them postulates

¹ Described as a *focus imaginarius*. B 672.

something about the phenomenal world, and that such postulation, while required for the proper functioning of the understanding, is necessarily ideal since transcendent in character.

The first of these principles is that of the reduction of genera in the direction of ultimate unity (*entia praeter necessitatem non esse multiplicanda*). This maxim sets before us as a goal the continued search for unity underlying diversity, and forbids us to stop before complete unification is achieved. Obviously such complete unification is not something given, but is conceived as purely ideal. But even to aim at it presupposes an essential homogeneity in apparently disparate phenomena, and, apart from such presupposition, the understanding could not come into operation at all, since the formation of concepts takes for granted the legitimacy of the search for unity in diversity.

The second principle is the converse of the first, namely that of the multiplication of species (*entium varietates non temere esse minuendas*). The implication of this maxim is that there can be no limit to the search for variety in nature any more than to that for unity. Here again it is clear on the one hand that no empirical grounds can be given for the postulation of variety which transcends all possible experience, and on the other that the existence of such variety is as essential for the formation of empirical concepts and therefore for the employment of the understanding as is the unity postulated by the first principle.

The third principle which completes and depends on the other two is that of continuity (*non datur vacuum formarum*). This asserts the affinity of all concepts, by forbidding us to admit that there are species or sub-species which reason can admit to be as close as possible to one another, and requiring us always to prosecute the search for further intervening forms. Such a presupposition, however, must like the others be regarded as purely ideal, since species in nature are really discrete from one another so that there can be no actual infinity of species intervening between any two of them.

Thus these ideas have genuine objective validity as heuristic principles, but we should nevertheless be mistaken in attributing to them the same kind of validity as the categories of the understanding, since the transcendent nature of their objects makes any strict deduction of them wholly impracticable. They refer to unities beyond all experience, to which our systematization is necessarily asymptotic. The unification required by the pure ideas is different

from that brought about by the pure concepts in that no intuitional schema for the systematic unity of all concepts of the understanding can be given. All that we possess here is what might be called the analogon of a schema, namely, the notion of a maximum expressed by the ~~ideas~~ ~~ideas~~ themselves. In this sense an idea of reason may be regarded as comparable with the sensuous schema; but it must be clearly recognized that the application of the concepts of the understanding to the schemata of reason yields no knowledge of objects (as does the application of the categories to their sensuous schemata), but simply provides us with rules for the direction of the understanding with a view to the maximization of systematic unity. Hence it relates to the object of experience only in an indirect manner, since it determines nothing in that object but shows the way in which the procedure of the understanding (which does determine something in the object) can be made completely coherent. Furthermore, the rules or maxims which reason gives to understanding, just because they do not determine objects, cannot conceivably conflict with one another. If we were to assert at the same time the actual existence of complete unity and infinite diversity in the real world, such conflict would be inevitable, but the maxim that we must never cease looking for such unity and diversity among phenomena involves no contradiction whatever and is indispensable to the advance of scientific knowledge.

We must now consider the application of this discussion to the three ideas of pure reason, the self, the world, and God. Although no deduction of these in the strict sense can be contemplated, we should be able to show that they are at least genuine ideas in that they do really contribute to the unification of our conceptual knowledge of phenomena. We thus regard them not as objects absolutely but as objects in the idea, that is as schemata for which not even an hypothetical object can be directly given. As a result of the argument which has preceded, it is clear that we must regard them as heuristic, not constitutive notions. They are to be regarded as analoga of real things or schemata of the regulative principle of the systematic unity of all knowledge of nature. In spite of this limitation, however, we may hypostatize at least the ideas of the self and God without error provided we realize that in so doing we have not extended our conceptual knowledge to the super-sensible. In each case we assume the existence of something which we do not know in itself at all, but to which as a ground of systematic unity we ascribe properties analogous to those required

by the understanding in the empirical sphere. We may then legitimately represent phenomenal connexions as the ordinances of a supreme reason of which our own is merely a faint copy. By so doing we only think of our relation to a being itself completely unknown to us and employ that thought as the schema of a regulative principle. Indeed, reason cannot think of the systematic unity which is its goal except by giving an object to the idea of such unity, though it must leave quite undetermined the character of this transcendent object which our concepts cannot grasp. It must be conceived simply as the point of view from which that unity which is so necessary to reason and so advantageous to understanding can best be extended.

§ 2

Consequently the notion of reason as regulative requires us to proceed in our empirical inquiries *as if* the ideas of pure reason were actually realized in experience.

In respect of the self this means that reason must substitute for the psychological notion of what the soul actually is (which is of no use to ethics) the rational notion of the unity which underlies the whole consciousness of the individual, and, by thinking this unity as unconditioned or original, form from it the idea of reason which is that of a simple substance immutable in itself and standing in relation to other real things independent of it. In respect of the world reason must maintain that in the explanation of phenomena we must consider the series to which understanding gives rise *as if* they were themselves infinite, that is, it must assume the possibility in every case of a progress or regress *in indefinitum*. But when, on the other hand, reason is regarded (as in ethics) as a determining cause, we must proceed *as if* we were dealing with an object not of sense but of pure understanding. Finally, as regards God, we must treat the connexions discoverable among phenomena *as if* they had as their source a single intelligent being as their supreme and all-sufficient cause. We thus regard phenomena as connected in a purposive whole and ourselves as bound to look for connexions among them which reflect this purposiveness; and we are actually enjoined by reason to do so, though only as a supplement to, not as a substitute for mechanical causes; and we can never fare worse than by discovering a pure mechanical nexus where we had hoped, in addition, to find a teleological one. To sum up, we may say that the whole function of reason is to perfect the

use of the understanding by arming it against two errors to which it is essentially liable and which may be named respectively the faults of *ignava ratio* and *perversa ratio*. The former consists in the liability of the understanding to regard its analysis of experience as complete at some point and to resent the demand for further inquiry; the second is the error of false hypostatization which leads us to treat the hypostatized ideas of reason as premises for arguments about phenomena instead of notions to assist us in our empirical investigation of them.

Natural science must pursue its investigations into nature in the light of natural necessity alone. It may entertain the idea of an intelligent originator of the universe, but never with a view to deducing from that idea the purposiveness in nature which it must seek to discover; and whether it discovers such purposiveness or not, the notion remains as an ideal which is both valid and necessary in its regulative employment.

§ 3

The constructive doctrine of the Dialectic is of fundamental importance to the Critical Philosophy. It contains a preliminary discussion of the doctrine which Kant later developed in the *Critique of Judgement*, and is in several respects more important than the Analytic, despite the more intricate reasoning of the latter; but, partly because it is awkwardly placed and inconspicuous, it has seldom been given the prominence which it deserves. It has, in addition, been the subject of some misunderstanding, particularly as regards its terminology.

Much of this misunderstanding arises from the distinction which Kant draws in the *Critique of Pure Reason* between reason and understanding. The fact that he describes both as 'faculties' is largely responsible, since it has led many of his interpreters to suppose that what he has in mind are two specifically different kinds of mental activity. This would give rise to insoluble problems, since if it were the case we should have to inquire whether, since what Kant calls the understanding is obviously concerned with what we commonly call thinking, the reason is occupied with (a) a special kind of thinking, or (b) some mental activity which is not thinking. Inquiries of this nature are, however, pure waste of time, and the problem they are intended to solve is imaginary, since the distinction between reason and understanding is in the first instance one of architectonic and nothing else. Kant is

writing a transcendental logic whose main divisions are laid down for him in advance by those of the general logic which they are required to amplify. General logic distinguishes between concepts, judgements, and reasonings considered as connexions of judgements, therefore transcendental logic must do the same. On the face of it the distinction here is purely formal. No one supposes that the logical activities of judging and reasoning are to be ascribed to different 'faculties' in the sense in which seeing and hearing are different faculties. They are distinguishable activities of a single faculty, thinking or *Vernunft* in the widest sense. It is from this starting-point that Kant's differentiation should be approached, and it is certain that he did regard the distinction between the kinds of thinking activity treated in the *Analytic* and in the *Dialectic* as being of great importance. The distinction, however (as in the case of transcendental and general logic), is emphatically not between one kind of thinking and another, but between one kind of object of thought and another.¹ More precisely, the object of the reason (as distinct from the understanding) is the activity of thought itself. It is essentially reflexive in character.

Against this it might be maintained that transcendental logic as such is reflexive in character, and that therefore this is no genuine differentiation between understanding and reason. Up to a point this contention is correct, since the *Analytic* is already dealing 'not so much with objects as with my thought about them in so far as this is possible *a priori*'; indeed, this is simply the definition of transcendental philosophy. It is better, therefore, to say that the function of reason as treated in the *Dialectic* is doubly reflexive; it is thought concerning itself with its own limitations as expounded in the *Analytic*. More accurately it is thought about the efforts of thought to transcend those limitations of its own activity which it has already discovered. In the *Analytic* we have considered (by means of thought) the claim of thought to know phenomena. In the *Dialectic* we consider its claim to transcend phenomena. The object of the reason is thus the understanding.

At this stage it is as well to recall the character of the limitation which the *Analytic* disclosed. It was there maintained that we can obtain *a priori* knowledge of connexions between real existences if and only if those real existences appear to us under the sensuous forms of space and time. It was also suggested (though this point

¹ See below, pp. 168 ff.

is not properly brought out till we reach the Dialectic) that even in our empirical or scientific investigations as to the ultimate nature of material things and conscious minds we aim quite inevitably at transcending the limitation implied by this condition of our knowledge. Indeed, it is only the belief that investigations of this character do somehow bring us nearer to understanding the self and the material universe as they are in their own right, without any reference to the conditions of their being apprehended, which seems to give anything more than a practical or pragmatic importance to them. Inasmuch then as critical reflection on the activity of the understanding in its scientific use leads us to doubt the validity of these 'ideas' of an absolute self and a real world (though as far as Kant himself was concerned, this doubt was purely academic), we must inquire further into the origin and true function of such ideas.

With Kant's account of the origin of the Ideas of Reason we have dealt already.¹ It is not very satisfactory and was to some extent dictated by his view of the necessary completeness of the classifications of formal logic. It may save trouble to point out at once that he does not in fact adhere to his statement that the only ideas of reason are God, the self, and the universe as a whole. Indeed, as he goes on (especially in the *Critique of Judgement*), it becomes obvious that what he really understands by 'idea' is the concept of any whole of which the idea precedes and makes possible the concept of its parts. The object of an idea of pure reason is any kind of organic whole as contrasted with a mere aggregate or mechanism. This concept is in no way inconsistent with his official doctrine, since God, the self, and the universe are obvious instances of what he has in mind. But his method of deriving the ideas from the three types of syllogism is not the best way of making his view clear. Nor is it quite safe to say without qualification that the object of an idea is always an organism since he held that the idea of space (since it was a whole the concept of which preceded that of its parts) was an idea of pure reason. All that can be said without misrepresentation is that the concept of an organic whole is often helpful in elucidating his account of the function of the ideas.

This leads to a further consideration of the distinction between the constitutive and the purely regulative employment of such ideas.² The employment of such a notion as a fact from which

¹ See above, p. 112.

² See above, p. 130.

inferences can be drawn as to the actual nature of phenomena is illegitimate and fallacious: this is the constitutive employment of the idea. As contrasted with it, the employment of the same idea as a guide to our investigation of phenomena on strictly empirical lines is both fruitful and necessary if we are to avoid a complete relativism in which no sequence of phenomena is more interesting or important than any other.¹

An instance (not his own) of what he has in mind may further elucidate his meaning. Take the conception of the political state as an organic unity which precedes and alone makes possible the conception of its members. In its abstract form this is just a pure idea. It is what Kant himself regards as the idea of a kingdom of ends, and is a purely intellectual conception, which does not admit of any deduction in the sense in which the concepts of the understanding were found to admit of one. It cannot be maintained (at least Kant thinks it cannot) that our existence as self-conscious beings is inexplicable except on the admission that such an idea is in fact actualized in our spatio-temporal experience.

Suppose, now, that in spite of this absence of deduction we assume that this idea is actualized in experience and that some particular state or community is an instance of it. If we do this we are naturally entitled to draw inferences from it as a fact, and maintain, for instance, that the individual can have no rights against the State because his relation to it is admittedly of a certain kind, e.g. that of mode to substance or member to body. To do this is simply to commit the fallacy of false hypostatization which Kant regards as the perpetual tendency of human reason unless checked by criticism, and he would certainly have regarded conclusions reached in this way as a particularly pernicious result of muddled thinking. It is peculiarly the perquisite of the less reputable followers of Hegel. The view with which it must be contrasted is that of Rousseau (in his better moments), namely, that the aim of political philosophy is to discover a form of association in which both the organic unity of the whole and the reality of the individual are preserved. Admittedly Rousseau does not always hold this but transforms his 'general will' (which can be discovered by analysis of the idea) into an actual entity or real existent located in a general assembly, a piece of confusion which has given rise to a good deal of disastrous theorizing by his successors. But at least he had the merit of recognizing in principle

¹ The idea provides a *focus imaginarius* for our empirical investigations.

that the organic state was a problem to be solved, not a fact to be discovered by simple inspection of any existing institution. The contrast between the two methods is simply this. The first treats the realization of the idea in the phenomenal world as a fact and proceeds to explain that world on the assumption that it is a fact. The second regards it simply as a guide to empirical investigation (not necessarily as an ideal or goal to be aimed at in the moral sense, though in certain cases it may be this also). The situation is rather that, in so far as we have an idea of a whole or unity of this kind, it is perfectly legitimate to examine existing institutions with a view to discovering elements in them which are consistent with it, or *as if* they conformed to our idea. But the maximum result which we can hope to achieve by this procedure is to confirm our belief that the idea is not a mere fiction. We can never by this or by any other means pass from belief to strictly scientific knowledge since this is barred by the Analytic. No possible deduction could give the kind of certainty we require.

It may well be argued that so far the procedure suggested by Kant, though perhaps legitimate enough, is of very little use to political theory. I am inclined to agree that this is so, but should draw from it the conclusion not that the method is valueless but that no existing political institution is sufficiently far removed from being a mere aggregate to give it much chance of success. A better example from this point of view is provided if we turn for a moment to the studies which deal with entities of a more promising character from the organic point of view, namely, the biological sciences. Here the difficulty under modern conditions is rather to see the other case, and to find instances of the abuse of the idea of pure reason which political theory so adequately provides. An instance of such an argument (though it is improbable that it has ever been used in quite such a crude form) would be something of this kind. The human (or any other) body is an organism, that is, it is a totality or whole whose notion is antecedent to that of its parts. Hence x , which is an organ in the body, must have a function relative to that body. The only function which it could perform (so far as we can see) is A . Therefore the *ratio essendi* of x , the ground of its being there at all, is the performance of A . Possibly if Leibniz had been quite consistent as to the organic and 'windowless' character of the monad he would have been forced to accept this as a valid scientific method. The point to be noted is that it is always possible, even if nobody does it, to regard

a special kind of totality as being actualized in experience and then to maintain that, *qua* actual, it literally determines the 'parts' or phenomena in which it is so actualized.

It is rather in respect of the regulative use of the idea that biological science is helpful, since here it may be argued that

- (1) we do not and cannot know that anything is an organism as defined by the idea;
- (2) we suspect that some things, e.g. living bodies, are at least to some extent embodiments of the idea, and possess a kind of unity which is not that of a simple aggregate or mechanical construction;
- (3) in view of this suspicion we are at liberty and indeed are bound to seek such mechanical sequences as are consistent with an organic or teleological interpretation of the phenomenon under investigation.

What is being looked for throughout, and all that can be looked for, is mechanical sequences of phenomena, but the clue in looking for them must be provided by the conception of a teleological nexus, even though the actual existence of such a nexus can in no circumstances be demonstrated.

§ 4

This necessarily raises the further problem of whether such a nexus is strictly possible, let alone actual, if the results of the Analytic are to hold good. What Kant is aiming at appears to be, and in fact is, the reconciliation of mechanism with final causes, whereas the two notions are, on the face of it, incompatible with one another.¹ Here again, his solution drives him back on his conception of the thing in itself as the ground of the appearances which our faculties enable us to know.

Both the problem and his solution of it are expounded in the *Critique of Judgement*,² and as might be expected, Kant formulates it as a logical antinomy. *Thesis*: All production of material things is possible in accordance with merely mechanical laws. *Antithesis*: Some production of material things is not possible according to merely mechanical laws.

At first sight it would seem that one of these propositions at least must be false. This, however, is the case only if we seek to regard them as true of things in themselves. But, says Kant, we

¹ See above, p. 27.

² § 70, Bernard trans., pp. 294 ff. Ak. v, p. 386.

have no warrant for doing this. If, on the contrary, we regard them simply as indicative of regulative maxims for our investigation of phenomena, there is no conflict or contradiction between them.

‘For if I say, I must *judge* according to merely mechanical laws, of the possibility of all events in material nature, and consequently of all forms regarded as its products, I do not therefore say: they are *possible* in this way alone (apart from any other kind of causality). All that is implied is: I *must* always reflect on them according to the principle of the mere mechanism of nature, and consequently investigate this as far as I can: because unless this lies at the basis of investigation, there can be no proper knowledge of nature at all. But this does not prevent us, if occasion offers, from following out the second maxim in the case of certain natural forms—in order to reflect on them according to the principle of final causes, which is quite a different thing from explaining them according to the mechanism of nature. Reflection in accordance with the first maxim is thus not abrogated. On the contrary we are told to follow it as far as we can. Nor is it said that these forms would not be possible in accordance with the mechanism of nature. It only asserts that Human Reason in following up this [teleological] maxim . . . could never find the least ground for that which constitutes the specific nature of a natural purpose. . . .’

Thus it is left undecided whether or not in the unknown inner ground of nature mechanical and purposive unity may belong to the same things in a single principle: we say only that our reason is not competent so to unite them. . . .’

Kant goes on to develop this view further and points out that we clearly cannot prove the impossibility of the production of organized wholes by purely mechanical processes since ‘we cannot see into the first inner ground of the infinite multiplicity of the particular laws of nature which are contingent for us since they are only empirically known’; and continues with a remark (which recalls the view of Locke)¹ that

‘Whether the productive faculty of nature is sufficient for that which we judge to be formed in accordance with the idea of purpose or whether there lies at the basis of things which we must judge as natural purposes a quite different kind of original causality which cannot be contained in material nature or the understanding—this is a question which our reason, very narrowly limited in respect of the concept of causality if it is to be specified *a priori* can give no answer whatever.’²

¹ On sensitive knowledge, see above, p. 33, and Locke, *Essay*, Bk. IV, ch. 3, § 26.

² Ak. v, p. 388.

We can never rule out mechanism as a possible sufficient ground for apparently teleological phenomena because we cannot prove *a priori* that the latter cannot be mechanically produced. But equally we are not entitled to assert mechanism as the only explanation since our ground for doing so would be simply that it is the only kind of causal nexus that we can understand *a priori*.

Thus Kant does not abandon or qualify in any way the contention of the Aesthetic and Analytic that objects of experience *qua* spatio-temporal must admit of indefinite analysis in terms of efficient or mechanical causality. That doctrine is and remains absolutely central to the Critical system and establishes the limit of *a priori* cognition. But he asserts in addition that investigations of this kind will never really satisfy us. They will indeed never enable us even to understand the nature of a single blade of grass. It is absolutely certain *a priori* that even if organic nature is generated mechanically (and he agrees that we can never prove that it is not) we can never understand the method of this generation. This is really obvious, though frequently forgotten by primitive mechanists. Hence his suggestion, which depends on faith and not knowledge, is that the real, intelligible, or noumenal character of things is through and through organic and that these things appearing under the forms of space and time preserve discoverable traces of their organic nature. But this organic nature is in no sense constitutive of their essence as phenomena, though, if the Critical view is accepted, it is definitely more than a vague intimation of a noumenal character. It provides, in fact, an indispensable indication of the lines along which investigation of mechanical causes must proceed if it is to have any hope of providing a systematic account of the physical world. There can be little doubt that Kant's belief in analogy to some extent determined his doctrine of teleology and also that of beauty as *Zweckmässigkeit ohne Zweck* which precedes it in the *Critique of Judgement*. The statue is not itself purposive or organic, but derives its form from the fact that the original is organic. Similarly we cannot prove that mechanical forces are inadequate to produce a statue or that sufficient monkeys armed with type-writers would not ultimately produce *Hamlet*, but if we take the statue and *Hamlet* as finished products it is quite legitimate to hold that in some way (which admittedly cannot be understood) non-mechanical forces are involved in their production. But we must not treat the two kinds

of cause as being on the same level and suggest that either can interfere with the other.

The relation of reality to appearance is therefore that of archetype to ectype. But the archetype, or thing in abstraction from the conditions of sensibility, is the necessarily unattainable goal of empirical investigation. We can think organic connexion *in abstracto*, but we cannot reconcile our thought of it with the conditions of sensibility, simply because the idea of an organism is *ex hypothesi* the idea of a totality, and the idea of a totality cannot be fully realized in space-time. This is Kant's final answer to the question 'How is metaphysics possible as a science?' The remaining sections of the *Critique* add nothing to it, though they clarify his position on some points.

DISCIPLINE OF PURE REASON (B 735-B 822)

Even the architectonic justification for the inclusion of this chapter is rather weak. Ordinary logic, as expounded for instance by Meier, always contains a section on the practical employment of logic, and therefore transcendental logic must have something to correspond to this. All that can be offered, however, is a summary of the use and abuse of reason which in fact is exactly what the *Critique* as a whole has provided. Consequently it is not surprising to find that the 'discipline' is simply a brief recapitulation of the principal Critical doctrines. The sub-sections into which it is divided should be read in connexion with the parts of the *Critique* to which they refer and which they do to some extent elucidate. Easily the most important is the first (the Discipline of Pure Reason in its Dogmatic Employment, B 741-B 766), which is a really excellent summary of the Kantian doctrine as to the peculiar nature of mathematical truth. It adds nothing indeed to what is contained in the Preface and Introduction, but it is the nearest approach in the *Critique* to a clear account of the 'schematic' character of the figures by means of which the geometer is held to 'construct his concepts in pure intuition'. It also offers an interesting contrast between the meanings of the terms definition, axiom, and demonstration in mathematics and natural science. As it was presumably one of the earlier parts of the *Critique* to be written, it possesses some historical interest as a link between the view of the Analytic and that of the Essay on the Fundamental Principles of Mathematics.¹

¹ See above, p. 60

The remaining subsections do no more than re-emphasize the doctrine of the Dialectic by insisting that the limitation of reason to the sphere of experience is a two-edged weapon since, though it prevents us from hoping for any extension of our own knowledge to the super-sensible, it gives us complete confidence that no materialist efforts to prove the non-existence of God, freedom, and immortality have the slightest chance of success. The Discipline of Pure Reason in respect to its Hypotheses (B 798-810) develops slightly the conception of the regulative employment of reason by insisting that hypotheses for the explanation of phenomena are illegitimate if they involve the postulation of noumena as actual agents in the physical world. Such postulation may be used only controversially to confute equally empty noumenal assumptions by an opponent.

CANON OF PURE REASON (B 832-B 858)

It may seem that in restricting pure reason to merely regulative use we have unduly limited its powers. This would be the case if our reason admitted of nothing but speculative employment, but this is far from being so. On the contrary, it is in the sphere of moral action that reason comes into its own and justifies us in asserting on moral grounds the existence of God and the immortality of the soul which, as the Dialectic has shown, could never be regarded as more than probable from the point of view of pure speculation. For if we accept as valid the notion of duty or obligation, we find that it implies the notion of desert. That is to say, we know that a person who does his duty deserves to be happy. It is evident, however, that in the phenomenal world the results of his actions are determined by purely natural causes and that there is no synthetic connexion between moral action and consequences beneficial to the agent. Now the demand of reason that the universe as a whole should be conceived as a rational totality forbids us to accept the notion that duty and interest ultimately conflict with one another (though even in such a case our duty would be unaffected), and we are therefore entitled to posit the existence of God and the immortality of the soul in order to produce a moral theory which reason can accept. These assumptions, however, are based on our conviction of obligation, so that it is quite inadmissible to attempt to base the latter on the former, and we must admit further that our rational belief in God and

immortality will be proportionate to the extent to which we accept the existence of obligation as a fact. As against anyone who rejects this fact all that can be argued is that, since as a result of the Dialectic he cannot rationally refute the existence of God, he would be well advised on prudential grounds to behave as if he accepted it.

The argument of the Canon in fact anticipates completely the position of the *Grundlegung zur Metaphysik der Sitten* and the *Critique of Practical Reason*, but is too condensed and incomplete to deserve any careful study apart from them.

The sections on Architectonic and History (B 860–B 884) are merely footnotes which add nothing to what has been stated or implied elsewhere in the *Critique*.

PART III

INNER SENSE AND THE ARGUMENT OF THE TRANSCENDENTAL ANALYTIC

INTRODUCTION

ALTHOUGH the foregoing summary suffers, as 'potted' versions must always do, from inability to reproduce the complex thought of the original, it does not, I believe, misrepresent the purpose of the *Critique of Pure Reason* except in the section dealing with the Transcendental Analytic. That misrepresentation lies in the substitution for the question with which Kant claims to deal of a different one, namely, 'How is our *a priori* knowledge of objects to be explained?' Certainly this is only a more general form of 'How is pure physics possible?', but the distinction is not unimportant. Kant's solution to his own problem is inextricably bound up with his views about the nature of and the relation between the human mind and the physical universe, and these cannot be understood without going beyond the *Critique* itself. But it is possible to give an answer on Kantian lines to the more general question which to a great extent escapes this complication. Such a course has much to recommend it from the point of view of exposition, provided that the omission is repaired later, and it is this which I propose now to attempt.

Kant's aim in the Analytic was actually to prove that the 'objects' about which valid synthetic *a priori* propositions can be asserted are, strictly speaking, objects as conceived by Newtonian physical theory, as may be realized when we remember that the categories when objectified by the transcendental imagination yield exactly the characteristics which bodies are required by that theory to possess. It was an ambitious aim, though not really more surprising than that of establishing *a priori* the validity of Euclidean geometry which he set before himself in the Aesthetic. What is surprising is rather that, having set himself a problem of which none would deny the difficulty and many would assert the insolubility, he seems to go out of his way to make it even harder by committing himself at the outset to the peculiar psychological doctrine of inner sense. This doctrine is at first sight both arbitrary and complicated. It seems to handicap Kant throughout, and he

nowhere states unequivocally what it is. Hence it is hardly surprising that his meaning has been sometimes misunderstood, and to remove such misunderstanding I shall here consider both the nature and the implications of the doctrine of inner sense at considerable length. From this consideration it will become apparent that 'inner sense' in some form, whether we regard it as a psychological monstrosity or not, is no mere whim of Kant's but is an essential element in his philosophy. Belief in it is imposed on him by his whole conception of the importance of experimental science in the field of knowledge.

If we next turn to the doctrine of the Analytic, we find that it is dominated throughout by the limitations which Kant's particular aim imposes, remembering that that aim is the establishment not merely of a *a priori* thought in general, but of a particular physical theory, and by his psychological assumptions. In the end his difficulty will be shown to be always that of time. He cannot say 'Time, like space, is immediately apprehended as a characteristic of all appearances', for to do so would be inconsistent both with his psychology and with his metaphysics, compelling him to admit that immediate awareness of my own existence is at least possible: and this would shake the whole basis of the Critical Philosophy by again opening the door to the Cartesian 'Idealism' which he believed himself to have finally refuted. But he must maintain that time is a characteristic of physical objects and not merely the order of my ideas; for unless this is the case the Newtonianism which he desires to support philosophically becomes mere delusion.

The primary purpose of the Analytic is to overcome this difficulty. Kant claims to prove a case by accepting the doctrines of contemporary psychology as sound in principle and then demonstrating that they must be supplemented by the admission of determinate *a priori* knowledge of objects in order to be consistent. It is not enough that there should be a transcendental background of some kind, though the necessity for such a background is shown in the Metaphysical and Transcendental Deductions of the Categories. It must have specific properties, all of which are discoverable by reflection on the nature of time itself.

Kant's procedure is as follows:¹

The Metaphysical Deduction prepares the ground by differentiating between general and transcendental thinking, which are distinguished not in themselves but in their objects. Trans-

¹ See above, p. 88.

centendal thinking is concerned with the 'pure manifold' of space and time.

The Transcendental Deduction¹ yields the main proof that all empirical thought processes depend on transcendental counterparts, and that the latter require a transcendental unity of apperception. Thus ordinary thought about objects is made to presuppose and depend upon *a priori* cognition.

The Schematism explains how the categories are realized in a pure space-time manifold by the activity of transcendental imagination, while the Principles enunciate the specific *a priori* synthetic propositions which depend on this embodiment.

Kant's line of thought throughout is that physical objects must have the properties required to make possible time as an order of them, not merely as an order of awareness.

The following discussion therefore consists of two main sections dealing respectively with inner sense and with the transcendental elements in knowledge. As a preliminary to the whole inquiry, however, I have given some consideration to the problem of psycho-physical interaction which Kant's distinction between noumena and phenomena involves and which is closely connected with his solution to the central difficulty with reference to time. I have also added a short section on the moral theory adumbrated in the *Critique of Pure Reason* and later developed in the *Grundlegung* and the *Critique of Practical Reason*. Admittedly this is not immediately relevant to the problem of the Analytic, but it seems to me important to recognize that the doctrine of self to which the theory of inner sense combined with that of Transcendental Logic gives rise must in the end be brought into harmony with Kant's moral doctrine before we can estimate the coherence of his whole view.

This method of proceeding inevitably involves some repetition of what has already been said in Part II, but I believe this to be justified on two grounds. In the first place it is my experience that, where Kant's philosophy is concerned, repetition is usually necessary and never harmful. And in the second, I am convinced that the correct interpretation of the Analytic demands considerable study not merely of Kant's predecessors and of his own earlier work, but also of the Dialectic which, though situated at the end of the *Critique*, is certainly earlier than the Analytic in composition. It should also be observed that the problems of the

¹ See above, p. 91.

Analytic are so intricate that, unless precautions are taken, the student is only too likely to remain involved in them for ever and fail to reach the Dialectic at all. Certainly no detailed commentary since that of Caird has really recovered from exhaustion at the end of the Deduction of the Categories in the first edition.¹

SENSA AND PHYSICAL OBJECTS

§ 1

The distinction between phenomena and noumena, as we have already seen, was first put forward by Kant after a long period of uncertainty to deal with a particular difficulty, namely that of space. He had indeed been previously troubled by problems concerning God and causality, but these were not uppermost in his mind at the time of the composition of the *Dissertation*. But Euclid and Newton could not be kept indefinitely in separate compartments, and he was inevitably led in the years before the publication of the *Critique* to assign substance and causality as well as space and time to the phenomenal realm. Noumena, however, though denuded of their spatial and physical character, still remained as real. They could not do otherwise, since Kant was above all else convinced that, if we once allowed ourselves to treat the universe of space, time, substance, and causality as real without qualification, we must thereby be committed to all the fallacies exposed in the Antinomies and confess the incompetence of reason to solve its own problems.

This being the case, however, there were inescapable difficulties of causal interaction for Kant to solve, and the nature, though not the solution of them, is revealed by even a superficial study of the opening section of the Aesthetic.² Perhaps in the end they may all be fairly said to resolve themselves into the general question of how the term 'phenomenon' is to be interpreted without doing violence either to the reality of physical objects or to that of non-empirical or noumenal objects. The problem is as follows:

1. Kant held a physiological theory of perception and maintained unequivocally that physical atoms affect our physical sense organs and produce the psychological data of con-

¹ Vaihinger requires two large volumes in which to reach the end of the Aesthetic, while de Vleeschauwer takes three to complete the Deduction.

² B 33-B 36. See above, p. 83.

sciousness so far as their matter is concerned. The spatio-temporal form is contributed by our sensibility, but the empirical sensa of colour, hardness, &c. (the secondary qualities, in fact), are generated by physical stimuli.

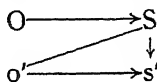
2. He also held that causation was a relation valid only of objects as spatio-temporal, that is, of phenomena. Hence it seems clear that both the self affected and the objects affecting it (in 1) must be phenomena.

But 3. Phenomena are themselves in the last resort only representations. They seem to have no existence save as the result of a synthetic operation performed by the self on a given manifold of sense.

Hence it would appear that for Kant there must be perception (to give material for synthesis) before there can be perception (caused by synthesized objects). In other words, something must happen before it happens, which is certainly rather peculiar.

A suggested solution¹ is that Kant must be supposing a kind of 'double affection' of the self. The account would then run:

- (a) The non-empirical object 'affects' the non-empirical self. This relation of affecting must itself be conceived as non-empirical, and the employment of any term in ordinary use to describe it is therefore misleading.
- (b) The non-empirical self performs the synthetic activity which transforms the result of this 'affection' into the complex of empirical self and empirical object.
- (c) The empirical object *causes* empirical sensa in the empirical self. Thus



Although this view is clumsy and still seems to involve something happening before it happens (though less blatantly than the account which it claims to supersede), it is not far from being correct.

It can, however, be better stated if Kant's general doctrine of representation and of the distinction between things in themselves and phenomena as one of viewpoint only is borne in mind throughout. 'Representing', as we have seen, is conceived by Kant as the fundamental intellectual activity of the self. It covers all forms

¹ For a fuller discussion of this problem see Adickes, *Kant's Lehre von der doppelten Affektion unseres Ich*, 1929.

of awareness by the self both of objects and of itself. It takes place at different levels (or from different points of view), and these distinctions are not, as Leibniz had supposed, merely those of relative clearness or confusedness, but distinctions in kind, so that representations are no longer homogeneous; and since reason demands a completely coherent system, we find that (*a*) within each level of representations, (*b*) between the different levels, there must be systematic connexion.

Kant holds that there are actually three levels with which we are concerned, namely (*a*) things in themselves, (*b*) phenomena, (*c*) 'mere representations', i.e. empirical sense-data. The manifold of (*c*) is connected by association only. This is shown in the *Analytic* to be made possible only by the causal connexions of (*b*). It is, however, strictly inaccurate to say that the causal interactions of physical bodies (in *b*) cause the modifications of sense (in *c*). The latter represent the former at a different level and are therefore dependent on them, but the dependence is not to be confused with that of bodies operating on one another. Association is analogous to causality, and the connexion of ideas by association as a whole depends on the causal interaction of physical reality as a whole.

Similarly the causally connected world of phenomena as a whole may be believed to depend on a systematically connected but unknowable world of things in themselves and to be in fact our representation of that world and its relations under the forms of sense and understanding.

Indeed 'affection' of the non-empirical self by the non-empirical object and the 'affection' of my empirical sense by the phenomenal object are actually the same event viewed from different stand-points. There is no numerically multiple affection of the self, though the relation of self to objects has to be conceived at different levels.

It would certainly be more satisfactory if levels (*b*) and (*c*) could be made to coalesce into a single whole bound together by complete causal interaction, and many commentators would maintain that this was in fact Kant's view. I believe, however, that in this respect his doctrine is not really complete or consistent since it is fatally handicapped by his failure to provide any really satisfactory analysis of the self.

Apart from this his position is at least intelligible. We may sum it up as follows:

1. That physical particles stimulate the nervous system and are in some sense responsible for the occurrence of sensa is an empirical truth discovered by the employment of the experimental method which the Principles have shown to be valid of experience.
2. That there is a non-empirical self which underlies the synthetic unity of apperception and whose 'affection' by things in themselves is the ultimate ground of this relation between physical objects and our senses is a metaphysical proposition which can never be proved but which is none the less a legitimate object of belief provided that it tends to the final unification of our whole philosophical outlook.

This conclusion is perhaps not very unlike the Cartesian doctrine that, in respect of the existence of an independent physical universe, God is no deceiver, though Kant's grounds for maintaining it were different.

§ 2

If this interpretation is correct, it follows that Kant's employment of the word *Erscheinung* in the *Critique of Pure Reason* is ambiguous. It means indifferently (1) data of empirical sensibility, colours, tastes, &c. Certainly these are sometimes referred to as *empirische Anschauungen* or simply *Vorstellungen*, but undeniably they are not infrequently called *Erscheinungen*. (2) Phenomena strictly so called, or physical bodies in space. In this connexion it is noteworthy that the *Opus Postumum*¹ actually does distinguish between *Erscheinungen* (= sense (1)) and *Erscheinungen von der Erscheinungen* (= sense (2)).

It also follows that *Erscheinungen* (2) are not coloured, smelly, &c., but have simply the physical properties of extension, impenetrability, and the other primary qualities, whereas *Erscheinungen* (1) are spatially extended as well as endowed with the secondary qualities; and in addition, that *Erscheinungen* (2) are not objects of immediate experience in the same sense as *Erscheinungen* (1) are. None the less, *qua* spatially extended, they are, in terms of Kant's distinction between phenomena and noumena, emphatically to be apprehended by sense and not by thought alone, and are thus objects of possible experience.

To understand how this can be brought about involves some inquiry into what Kant's doctrine of sensibility really was.

¹ Ak. xxii, pp. 339 and 363-5.

Superficially it is very simple. There is outer sense whose form is space and inner sense whose form is time. Not much examination is required, however, to show that the doctrine is far from a simple one. Why, for instance, should the distinction between outer and inner sense be introduced at all? Why, if it is, should time be connected with the one rather than the other? *Prima facie* at least it would seem that Kant's requirements would be better served by the doctrine that all cognition involves sensuous as well as intellectual ingredients. The question whether space or time or both of them are involved in a particular act of knowing would be purely empirical and raise no special problems. It would perhaps be possible to restate Kant's general philosophical doctrine in this sense, but to do so is simply to ignore the whole of his psychological outlook and development. It would also involve a drastic reorganization of his views on physics, and a reconsideration of his whole claim to have established knowledge within that sphere while leaving room for faith in respect of morals and theology. For what he wishes to maintain is

- (a) that self is less immediately known than physical objects;
- (b) that the latter are known about *a priori*;
- (c) that the former is a possible object of thought but not of knowledge.

And, as far as he is concerned, none of these can plausibly be maintained unless the distinction between inner and outer sense as well as that between noumena and phenomena can be upheld. The doctrine of inner sense, indeed, is fundamental to his view if it is to get beyond generalities; and detailed consideration of it is really unavoidable if he is to be treated seriously.

INNER SENSE

§ 1

It is a commonplace to assert that much of Kant's metaphysical thinking was dominated by psychological assumptions whose validity he never questioned and to which much of what we find in his view that is either unattractive or unintelligible may safely be attributed. Up to a point this seems to me to be sound enough. It is, I think, undeniable though somewhat surprising that Kant accepted much of the empirical psychology of Locke and his successors in Germany, particularly Tetens, as having the same kind of essential rightness as he held to belong to the logic of

Aristotle. In neither case did this commit him to a detailed adherence to the views of the master, but his allusion to Locke as the great physiologist of the human understanding¹ is certainly to be taken as seriously as his assertion that logic was in principle completed by Aristotle² and has since required no modification except in its details.

It is not, however, easy to discover exactly what his psychological doctrine actually was. That it was Lockean in principle though not in detail is generally held to be the case, but it is precisely that difference which is of vital importance when we attempt to consider the character of his doctrine of inner sense.

It is all very well to say of a crucial passage that 'this, like everything else which Kant wrote about inner sense is profoundly unsatisfactory'³ and to allude in passing to Tetens's *Philosophische Versuche*, but it is not very helpful. Few readers would deny that a whole section of the Deduction in the second edition (§ 24) which Kant obviously thought was extremely important to his argument is as it stands completely unintelligible, and this is the section which contains his considered account of what is to be understood by inner sense in its relation to apperception.

I shall first explain what I take Kant's psychological position to have been. Although this account is largely non-controversial and capable of being established beyond doubt from his own writings, that part of it which relates to inner sense is necessarily conjectural. The conjecture seems to me, however, at least highly probable in the light of the additions introduced into the second edition of the *Critique* which are designed very largely to elucidate difficulties in the doctrine of inner sense which had already given rise to serious criticism.

The first psychological doctrine to which attention must be drawn is the division of the faculties of the mind into cognition, volition, and feeling. This is never questioned by Kant, though he gives no grounds for maintaining it. It forms the basis of the division of his own lectures on empirical psychology (or anthropology) and appears to have been accepted as intuitively certain and in need of no discussion or elaboration, though it has important consequences for his view. All that it gives rise to in the first instance is the division of the Critical Philosophy into the three *Critiques* dealing respectively with these three faculties, and the

¹ A iii.

² B viii.

³ Norman Kemp Smith, *Commentary*, p. 148. See also p. 294.

implied limitation of the first of them to cognition to the exclusion of conation and feeling.

We must next attempt to discover Kant's doctrine of the psychology of cognition from the *Critique of Pure Reason* and the *Anthropology*;¹ and for the time being at least, the investigation may be restricted to the sphere of sensibility. This, as has already been observed in other connexions, was for Kant, as for his contemporaries, essentially representative in character. The image in consciousness while not conceived as a literal copy of an independent real was at least analogous to it.

That Kant held a view of this kind is clear from the account which he gives in the *Anthropology* of the psychology of sense perception. Each of the special senses is there dealt with in turn, and it is carefully pointed out that they differ considerably from one another in respect of their representative character. Thus sight,² which he here and throughout his work regards as the most 'objective' sense, represents primarily the character of the object and only minimally, except in special cases of bad light or bad eyesight, the character of the nervous system; whereas in taste, which is the most subjective, the situation is reversed. The other senses fall between these extremes. Kant's view of the nature of the special senses is therefore as follows. The content of consciousness in so far as it consists of data provided by these senses is a representation partly of an object in space outside my body and partly of the receptive apparatus of my body itself.

Now the five special senses, as again he states explicitly³ in the *Anthropology*, constitute between them the outer sense, and from this the inner sense has somehow to be distinguished. The difficulty which at once presents itself is that the immediate data of consciousness are already exhausted and therefore there is in fact nothing left for inner sense to do. We might at first suppose that, in so far as it is clearly regarded as being cognizant of my own states, it could have as its content the non-cognitive states of the self. It seems plausible to suggest that outer sense makes me aware of tables and pictures whereas inner sense provides my consciousness of toothache or aesthetic satisfaction. But this interpretation is quite un-Kantian and cuts clean across both the division⁴ of faculties and the doctrine that sense *qua* cognitive is

¹ *Anthropologie in pragmatischer Hinsicht*. Ak. vii: also *Menschenkunde oder philosophische Anthropologie*, edited by Starke, Leipzig, 1831.

² *Anthr.* § 16.

³ *Ibid.* § 16.

⁴ *Ibid.* § 15.

representative. My toothache and my pleasure are for Kant both 'feelings' which are non-representative and therefore not to be attributed to sensibility. Clearly this was not very consistent of him since toothache at least could be as plausibly regarded as representative of my physical body as the taste of wine, but I can find no evidence that he ever considered this point.¹ If, however, we do eliminate all data of the special senses and all volitional and emotional states, the problem of finding any content for inner sense seems insuperable. Yet Kant obviously believes that such a content is provided, and that it is representative of the self in the same way that the outer sense is representative of objects in space. This is certainly a sufficiently hard saying to deserve some elucidation, but it would be unfair to expect such an elucidation except by accident in the *Critique of Pure Reason*, since on Kant's view the cataloguing of the faculties of the mind and the explanation of their manner of operating is the province of anthropology and not of transcendental philosophy. Unfortunately, however, the reference to inner sense in the *Anthropology* is as brief and obscure as the account of outer sense is prolonged and detailed. None the less some valuable information can be extracted from it. Kant asserts² (1) that inner sense must be distinguished from pure apperception. The latter is a man's consciousness of himself as active, which belongs to the faculty of thought, whereas the former is his consciousness of himself as passive, that is as being affected by the play of his own thoughts; (2) that this doctrine is not barely anthropological but rather psychological (in Kant's sense), that is, it presupposes that man has a soul; (3) that the soul should really be regarded as the organ of inner sense; (4) that inner sense is subject to illusions inasmuch as the data of purely subjective origin may present themselves to me either as representations of real things or as divine revelations. In such cases there is a disease of the organ, i.e. the soul, comparable to diseases of the organs of outer sense.

At first sight this is not particularly encouraging. In so far as it suggests any meaning at all, it might lead us to suppose that Kant, in despair of finding any other content for inner sense, has made it responsible for the apprehension of illusions or hallucinations. This, however, cannot be the correct interpretation since, what-

¹ He distinguishes between *sensus internus* and *sensus interior*, but not in any very satisfactory manner. Ibid. § 15.

² Ibid. § 24.

ever precisely the term inner sense may mean, Kant is at least consistent in always maintaining that what I apprehend by means of it is my own self. Furthermore, it is his invariable practice both in the *Critique* and the *Anthropology* to regard inner and outer sense as parallel to one another, and, since this is the case, it is as well to attempt an interpretation of the former on the analogy of the latter. Now outer sense is defined as the faculty by which I represent to myself outer objects through the medium of specific organs, eyes, ears, &c. If these organs are diseased or imperfect, the result of such imperfection is a misrepresentation of the object. If the parallel between outer and inner is to be maintained, we should therefore expect that the account of the latter would run as follows. Inner sense is the faculty by which I represent to myself not external objects but my own self, through the medium of a specific organ (termed the soul). If this organ is diseased, the result is a misrepresentation of myself.

Now while there is no difficulty in reconciling this form of statement with what Kant actually says, it is far from easy to attribute any positive meaning to the view, and it is at this stage that a certain amount of conjecture is unavoidable. It seems not unreasonable to suppose that he is here taking for granted a contemporary theory without troubling to make explicit what exactly that theory is, and it happens that there is ample evidence in his correspondence to show us whose theory it was most likely to be. It is safe to say that there were only three of his contemporaries to whose philosophical judgement he attached any great importance, and one of these was the philosophical psychologist Tetens whose chief work¹ appeared shortly before the publication of the *Critique of Pure Reason*, and which is distinguished among other things by a curious and novel doctrine of the nature of inner sense.

§ 2

The essence of this view was as follows.² It is thoroughly psychophysical in character and takes for granted that the occurrence in consciousness of any representation of outer sense presupposes the occurrence of a physical modification in the cortex as a result of the stimulation of a sense organ by an object. It is, however, by no means behaviourist or epiphenomenalist in character, since the author is equally convinced that the self can originate changes in

¹ Tetens, *Philosophische Versuche über die menschliche Natur und ihre Entwicklung*, Leipzig, 1777.

² Tetens, op. cit. § 7.

consciousness and that these are necessarily accompanied by modifications in the cortex. This he holds to be perfectly consistent with either pre-established harmony or *influxus physicus* as an account of the relation between mind and body;¹ and therefore he is not called on to decide between these. His difficulty is to see how, on such a view, the representational character of inner sense is to be explained, though as regards the existence and function of such a sense, he is never in the least uncertain. Its function is to provide immediate awareness of awareness, and its existence is obvious to introspection. Tetens also maintains, however, on introspective grounds that awareness and awareness of awareness are never in fact simultaneous. It is never true to say 'I know that I am thinking' but only 'I know that I have thought', and this is ultimately his ground for maintaining the representative character of inner sense.

The solution is that the mind in the act of thinking modifies its ideas (by abstraction, concentration, &c.). This modification is accompanied by a corresponding modification of the *ideae materiales* in the cortex,² and to this physical modification corresponds the event in consciousness which I describe as awareness of awareness and which constitutes the content of my inner sense.

To put the matter in a sentence, what I am aware of by means of inner sense is my own past acts of awareness. Tetens himself was prepared to take a similar view of my awareness of volitional and, with reservations, even of emotional experience, but he paid little attention to these.

If we now revert to Kant's statement in the *Anthropology*, it seems possible to attribute a fairly intelligible meaning to it assuming that he had Tetens doctrine in mind. He would be bound of course to begin, as in fact he does, by dissociating himself from the view that inner sense provides me with immediate awareness of the mind's activity since that would confuse it with pure apperception and obliterate the sharp distinction which Kant draws between the receptivity of sense and the spontaneity of understanding. None the less, provided this point is made clear, inner sense might still be awareness of awareness, or awareness of a past act of perceiving (since Kant seems to have entirely agreed as to the distinction between any cognitive act and my awareness of its occurrence). Furthermore, such an interpretation is perfectly consistent with his belief in illusions of inner sense, since the illusion

¹ See above, p. 45.

² Cf. Ak. ii, p. 345.

(due to disease of the relevant organ) would lie in taking a past event as a perception when it was in fact an hallucination. In such a case there would in fact be a misrepresentation of a state of myself which could reasonably be regarded as parallel to the illusions of outer sense in relation to objects.

The upshot of all this is a psychological theory of perception which is both odd in itself and difficult to harmonize with Kant's theory of knowledge. Nevertheless it does seem to me to be consistent with what he says both in the *Aesthetic* and the *Analytic*. The view is simply that the content of immediate awareness is (a) non-cognitive states with which we are here not concerned; (b) intuitions which are representations of objects (including of course my own body); (c) intuitions which are representations of myself as perceiving. These are literally scattered about among my perceptions of things and are entirely separate both from one another and from those perceptions.

If, now, we assume that this in fact was Kant's view, it is not hard to explain his formulation of it in the *Aesthetic* in the light of his contention that space and time are forms of sensibility and not attributes or containers of things in themselves. The doctrine of space in relation to outer sense presents little difficulty and would have presented even less if Kant had been more careful at the outset to distinguish between representations which are objective or independent of the particular perceptual peculiarities of the individual and those which are mainly or wholly dependent on such peculiarities. All he needs to maintain is that representations of outer sense are as such spatial in character. Admittedly illusion and obscurity are possible, so that I am liable to judge falsely if I exercise insufficient care in ascertaining what the data of outer sense really are; I may take what is in fact a representation of an occurrence in my body for a representation of something at a distance from it, or vice versa. But this seems to present no insuperable obstacle to the doctrine that all data of the five senses are spatial or have space as their form. Equally it seems simple to say that the data of inner sense are essentially temporal, though it soon becomes apparent that grave difficulties are involved in doing so. The argument in favour of such a course is evident. If the data of inner sense are actually awarenesses of past perceptual awarenesses interspersed among such perceptual awarenesses, the only form or order which they possess is that of succession in time, and they must share this order with the acts (or passions) of

perceptions by outer sense among which they occur. Time thus becomes the form of inner sense without qualification, and also the form of outer sense in so far as the latter is looked at from the side of the subject perceiving and not of the content perceived. It is at this point that the real problem emerges, for the inevitable conclusion of such a doctrine is that awareness of succession is always and only awareness of succession of activities of representing, and can never be awareness of succession as inherent in the content represented. To put it differently, the data of the five senses must always have space, not time, as their form. The only temporal element in them is that they occur successively for me.

§ 3

This is certainly a queer and paradoxical view, but I hope to prove that Kant was led to adopt it not by any old-world attachment to a distinction between inner and outer sense or even by the representation view in the special form in which he happened to hold it, but simply because he saw more clearly than many of his successors have done what is really implied by the acceptance of any physiological theory of perception.

That he did adopt it is established beyond reasonable doubt by some of the passages added in the second edition of the *Critique*. I will cite only one of these from the elucidation of the Aesthetic. 'Since time', he says, 'does not represent anything save in so far as something is posited in the mind, it can be nothing but the mode in which the mind is affected by its own activity (namely through its positing of its representation) and so is affected by itself: in other words, it is nothing but an inner sense in respect of the form of that sense.'¹

That he was also conscious of the implication of the view which I have mentioned above is clear from the remark on time which occurs in both editions: 'time is nothing but the form of inner sense, that is, of the intuition of ourselves and of our inner state. It cannot be a determination of outer appearances: it has to do neither with shape nor position, but with the relation of representations in our inner state.'²

Kant, then, appears to have been clear as to the difficulty in which his view involved him and to have recognized that by adopting it he was committed to maintaining that succession in time was always of, not in appearances, so that a central problem

¹ B 68.² A 33, B 50.

for him was bound to be 'How do we come to apprehend objective succession, since it is now *ex hypothesi* impossible to do so by means of sense?'

That this awkward situation does not arise because of any prejudice or lack of consideration on Kant's part, but is really inherent in any theory of perception which attaches importance to what are normally regarded as physiological facts, is well illustrated by the discussion on space and time perception in Professor Koffka's book on the *Principles of Gestalt Psychology*.¹ The fundamental hypothesis of this view is very similar to that of Tetens, namely that there is analogy or as the moderns prefer to call it, isomorphism, between events in the cortex and events in consciousness, and this notion is capable of being developed with what, for the layman at least, is considerable plausibility as long as space perception alone is in question. The difficulty arises when an attempt is made to produce a cerebral occurrence which can make possible any discrimination between a succession of apprehension and an apprehension of succession. It will not do simply to say that successive stimuli give rise to consciousness of succession, for successive stimuli must in any case be called in to explain my continued perception of what is in fact static. Hence Professor Koffka is led to say that, whereas successive stimuli on the same part of the cortex produce succession of consciousness, stimuli on different, though neighbouring parts of it produce consciousness of succession. Whether this account is physiologically tenable or not is of no importance here. The question is whether any conceivable physiology could do it any better, and I do not at the moment see that this is possible. For if we posit an organ of sensation, the cortex, which possesses a temporal as well as a spatial order of its own, there is no particular difficulty in supposing that the psychical occurrences which are correlated with it are also temporal in character. But I cannot conceive any mechanism which would automatically differentiate psychical data into representations of succession as distinct from successions of representations. This difficulty can easily be disposed of by those who maintain that physiological difficulties have nothing to do with philosophy, and commentators who wish to set Kant on the road to absolute idealism may find here considerable encouragement. All that is necessary is to drop the notion of things existing independently of the percipient subject, give the self an intellectual

¹ Koffka, *op. cit.* 438 ff.

intuition of its own operations, and the problem is solved. To do this, however, is obviously not to interpret Kant but to deny out of hand practically everything which he believed to be true. If we take this line we certainly need trouble no more about his problems as to the physical universe since all of them become irrelevant.

§ 4

As an alternative we may at least consider the manner in which he attempted to supplement his doctrine of sensibility by his conception of thought as a spontaneous synthesizing activity. Before proceeding to this, however, it is as well to notice that his account of perception differs sharply from that of some other empiricists in that it is not atomic; it is cinematographic. His view is not that bare sensibility provides a mere manifold which has somehow to be poured into the moulds of space and time, but that it provides a number of three-dimensional representations, discrete from one another, and related in a temporal series which is the order of their apprehension by the perceiving subject.¹

We must now consider what I have already mentioned as a crucial passage in relation to Kant's psychology, namely § 24² in the Deduction in the second edition, which is mainly devoted to a difficult discussion of the doctrine of inner sense in relation to apperception. As a preliminary to this it is necessary to emphasize a further Kantian assumption which we should probably regard as psychological in character, though he himself would not have admitted this. The doctrine in question is simply that, whereas in perception the mind apprehends something which happens to it, in thinking it exercises a synthesizing activity which is absolutely spontaneous and therefore in itself non-empirical in nature. This does not imply that there can be thought about thought as such or in itself, for this would involve an intellectual intuition of which we are not possessed. On the contrary, it means that understanding or apperception as distinct from sensibility can never of itself provide a manifold or content either pure or empirical as a content for thought.

The purpose of § 24 is twofold. It aims in the first place at distinguishing between inner sense and apperception and in the second at elucidating what is meant by the contention that inner sense provides me with a mediate or representational acquaintance with myself. These problems, however, are not considered

¹ See below, p. 174.

² B 152-B 156.

separately, but answers to them emerge, or rather can be disintegrated from the general discussion of apperception, imagination, and inner sense. It seems to me that the following is a fair though somewhat condensed account of the position which Kant wishes to defend.

1. Inner sense and apperception tend to be assimilated (wrongly) by psychological writers. The explanation of this is the difficulty which these writers find in the assertion that we are affected by ourselves in such a way as to provide the representational element essential to sense perception.

2. This difficulty disappears when we consider that apperception is based on the spontaneity of the understanding. This spontaneity consists, not merely in the ordering of the actually presented data of sense in accordance with the categories, but in the activity of the imagination by which those data must be supplemented in order to make possible an experience which is unitary or coherent for thought as distinct from mere association.

3. This synthetic activity is not inner sense, but is the reality which affects that sense, just as objects are the reality which affect outer sense; the understanding by its activity affects or determines inner sense, but this determination of inner sense by understanding does not mean, what superficially it might be taken to mean, that inner sense is a something which is determined by the understanding in the sense of being understood by it. On the contrary affection is used in its ordinary literal sense. At a later stage the data of inner sense like those of outer sense may be 'understood', but that is not yet the question.

4. The result of inner sense is to impose on the synthesizing activity of the understanding (which in itself is non-sensuous and therefore non-temporal in nature) a temporal form, so that the timeless thinking which is the real self is represented as a series of discrete activities located in time, just as by outer sense the non-extended thing in itself appears as located in space.

The function of the understanding assisted by the productive imagination is then to introduce intelligible order into both these manifolds, and the difficulty with which it is presented is (a) that such order can be introduced into the manifold of inner sense only after and not before it has been introduced into that of outer sense; (b) that such order can never be introduced into inner sense unless time can first be postulated as a condition of the phenomena of outer sense (as distinguished from timeless things in themselves

referred to just above). Kant's attempt to tackle these problems in the section dealing with the Schematism and in the Principles throws further light on his position and will be considered in greater detail later. It will, however, be generally conceded that he did regard them as fundamental and spent a great deal of time and energy in trying to solve them. Hence all that I am here concerned to show is that they are the inevitable consequences of the psychological theory which I suggest that he held.

For suppose that by outer sense I am provided with a series of pictures, none of which contains any temporal sequence in itself and each of which vanishes completely on being perceived; and also that by inner sense I am aware simply of acts of synthesis which follow one another but have no content other than the activity of the subject. It is at once evident that the latter do not by themselves present any material on which thought can work so as to produce the conception of an object (in this case the empirical self) of which they can be called representations. 'For all inner perceptions we must derive the determination of lengths of time or of points of time from the changes which are exhibited to us in outward things, and the determinations of inner sense have therefore to be arranged as appearances in time in precisely the same manner as we arrange those of outer sense in space.'¹ We cannot even date these affections of inner sense unless we commence operations by considering the contents of the acts of synthesis by which acts alone the inner sense is affected. Hence the understanding must first project time into the empirical objects of which the data of outer sense are representations. Only after it has done this can it proceed to the further task of constructing an empirical self.² If this is a correct account, then the Schematism becomes the procedure by which time is postulated by the understanding as a condition not of the representations of outer sense but of the empirical and therefore phenomenal objects to which those data are to be 'referred', that is, of the objects of pure physics, and this incidentally accounts for the fact, to which attention has frequently been drawn, that Kant in the later part of the *Analytic* almost wholly neglects space in favour of time. For if the spatio-temporal objects of my representations (i.e. phenomena) are in fact represented as spatial by outer sense, no special difficulty in respect of space is thereby presented to the understanding. But if they are

¹ B 156.

² This I take to be the essential point of the Second Analogy.

presented as non-temporal but are none the less known to be really temporal (which physics evidently claims that they are), then some account of how this knowledge can be attained is obviously essential.

Kant, it seems to me, is here involved in a difficulty which is not of his own making but which must be faced by any view which pretends to take seriously the investigations of physics and physiology. For physics has no more interest or importance than a peculiarly intricate crossword puzzle unless we maintain (as Kant undoubtedly did), against empirical idealism, that there is a universe of events in space-time which is objectively real in the sense of being independent of any and every percipient mind: and physiology is surely justified in holding that psychical data are determined by occurrences in the physical world. But if we admit the validity of these assumptions, Kant is surely quite correct in holding that our admission is something which requires philosophical examination. The difficulty is that, if the physicist is right, it is *a priori* impossible for the physiologist to invent a mechanism which will enable us to know that he is, and consequently the assumptions of physics, if they are to be justified on grounds other than those of revelation, require to be established or at least rendered intelligible by the conception (which itself may perhaps be only an assumption) of a spontaneous synthesizing understanding.

Kant was aware of this difficulty, and the theory of knowledge put forward in the *Critique* is largely an attempt to overcome it. Hence it is natural that the psychological background of the theory should be determined by the peculiar character of the problem and that the comparatively straightforward empiricist view of Tetens should be developed into the intricate doctrine of transcendental apperception and productive imagination. It seems a fair guess, though admittedly nothing more, that something like what follows is what took place in Kant's mind during the development of the Critical view.

'The physical theory of Newton', he might have said, 'is undoubtedly sound, but if we are to establish its *a priori* character (and also that of Euclid's geometry) we must hold that space and time are both forms imposed by the mind and also objective conditions of the realities with which physics has to deal. This leads to the conclusion that those realities are representations, not things in themselves.

'But the physiological theory of perception, whose validity is also unquestioned, assures us that the data of sense are produced by the operation of physical bodies on our nervous system and are therefore representational in character. Now consideration of what we are told of the nature of those processes shows that the data obtained by means of them cannot by themselves be adequate to give us awareness of the truth of what the physicist asserts, since they cannot provide any means of distinguishing between a succession of apprehension and an apprehension of succession. Therefore we cannot say that time as a form of phenomena is capable of being given immediately to sense, as we are able to do in the case of space. Time, therefore, must be regarded as essentially the form not of outer but of inner sense. This being the case, we must, in the interest of Newtonian physics, devise a means whereby time can be projected, not into representations, which remain purely spatial, but into the phenomena which are the objects of representations, and to do this we must introduce the notion of apperception and also that of productive imagination.'

The resulting view is that apprehension of the Newtonian universe, of space, time, substance, and causality is in fact the presupposition or pre-condition of my awareness of the representations of outer sense as being in a temporal order from which alone the determinate order of the representations of inner sense can be deduced. Empirical self-consciousness presupposes the apprehension of an objective world of phenomena.

TRANSCENDENTAL SYNTHESIS

§ I

If the conclusions I have reached as to the doctrine of inner sense are sound, the line along which Kant was led to tackle the special problem of the possibility of pure physics is to a considerable extent determined in advance. But before we consider it in detail it is wise to revert for a moment to the general nature of his transcendental philosophy because the *Analytic* is sometimes made unnecessarily hard to follow by a tendency to regard Kant's outlook as more complicated and abstruse than it actually was. I have said before that transcendentalism involves no special kind of thinking; it does involve, however, a difficult view as to the character of what is capable of being thought about *a priori*. To understand just what this was, we must bear constantly in mind

the fact that Kant's thought about the physical universe was not very remote from that of his immediate predecessors; for Kant, too, believed in the existence of a multiplicity of primary-qualified substances acting causally on one another in space, in spite of the metaphysical difficulties which any such view must involve. Such a world is clearly not open to inspection in any simple sense; it is not an object of empirical perception. On the other hand, Kant will not maintain either that it is accessible to pure thought, or that it is a mere *ens rationis* or hypothesis invented to explain sense-data. His realism forbids him to hold that I create or construct phenomena, yet he must argue that they are somehow mental in character if I am to discover their laws *a priori*. The criticism that he confuses knowing with making thus misses the point of his contention. He wants to assert that bodies really affect one another in the same sense of 'reality' as that in which they can be said to be really square or spherical, and when he calls them 'synthetic' he means that their structure is of a certain kind and not that they are actually generated in a certain way.

Transcendentalism, then, is an investigation into what the nature of the physical world must be, and includes the reason why there must be such a world at all. But it should be understood from the beginning that the necessity in both cases is not strictly logical. Other accounts might be offered which were free from contradiction, but Kant would regard them as unimportant if they lacked the empirical confirmation which his own doctrine claimed from introspective psychological reflection. Nevertheless we do him less than justice if we regard the Analytic as nothing more than *a priori* psychology. It is rather an attempt to exhibit pure physics, conceived as a system of necessary laws, as supporting the whole method of experimental investigation on which rational life depends. Hence it is not surprising that the argument of it rests to a great extent on the propositions about the nature of space and time which the Aesthetic is supposed to have established and cannot be considered without some further reference to these.

The argument of the Aesthetic is generally agreed to be unsatisfactory and, when we consider the part which it has to play in the *Critique* and compare this with Kant's original purpose in composing it, the defect is not surprising. To put the matter briefly, the doctrine of space and time which Kant's confirmation of Euclid demands is different from and at first sight inconsistent with that required by his defence of Newton. For the former space

is conceived as a given whole, whereas for the latter it is a manifold synthetically combined. Perhaps these contentions are not genuinely inconsistent with one another, and perhaps Kant knew that they were not, but certainly he never made his position in the matter properly explicit. Nor does he ever openly admit that the parallelism of time and space assumed uncritically in the Aesthetic is wholly inadequate to the doctrine of the Analytic. Hence it is at least questionable whether the Aesthetic is merely incomplete or whether it is of such intrinsic badness as to vitiate the whole procedure of the Analytic. For it might even be argued that, since transcendental thinking is supposed to have as its object the pure manifold of space and time, Kant has already made such a muddle of these before the Analytic opens that his further discussion can have nothing but antiquarian interest.

§ 2

The central doctrine of the Aesthetic is that Euclidean geometry is necessarily valid of appearances because space and time are *a priori* forms of perception.

The nerve of Kant's argument is his conception of synthesis as contrasted with analysis, and the problem of the Aesthetic, and indeed of the *Critique* as a whole, is 'How do we come to formulate propositions which must be true in a particular branch of knowledge.' The principle of contradiction assures us that, if in the proposition *S* is *P* analysis of the concept *S* (e.g. body) reveals that *P* (extension) is actually contained in *S*, then 'All *S* is *P*' is necessarily true. This, however, is not adequate to establish the validity either of mathematics or of pure physics. Analysis of the concepts 7, 5, and addition does not provide the answer to the sum 7+5. This answer, as we have seen, is obtained only by the process of actually counting up to 12, and such a process is an instance, not of analysis but of synthesis.

A synthetic act is one in which I obtain a result by proceeding in accordance with a rule. And when I reflect on the rule which has governed my procedure, it is possible for me to say with certainty that the product of my action must have certain characteristics simply because I have followed that rule in the construction of it. It is not essential that I should myself be aware of the rule at the time when I obey it. Such awareness may well come only after prolonged investigation.

Thus a circle is a figure constructed in accordance with a rule,

and reflection, whether previous or subsequent to the actual process of construction reveals that, by following that rule, I have generated a figure which contains necessary relations not discoverable by analysis of its concept. These relations, however, are necessarily entailed by my act only because the construction is performed in a particular medium, namely Euclidean space.

Hence if I am to know that Euclidean geometry is valid of phenomena, I must (a) be aware of the rule which I follow in the construction of geometrical figures, (b) have such an insight into the nature of Euclidean space as to realize that the construction of my figure in it is possible, (c) know that the space in which phenomena exist really is Euclidean.

As far as Kant is concerned, (a) presents no special difficulty in the Aesthetic. It is here assumed that I can reflectively discover the rule which has governed my procedure in the construction of the circle and recognize the inevitable implications of that procedure as regards the completed figure. The problems raised by (b) and (c) are all supposed to be solved by the demonstration that space is the form of outer sense.

The difficulty is that for the purposes of geometry space appears to be regarded by Kant not as a form in the normal sense at all, but as a content or manifold. It is that in which I draw my figures and in which physical bodies move in accordance with Newton's laws. In that case, however, one is bound to ask whether Kant is not mistaken in supposing that I can know anything about its nature except empirically.

This objection is valid against the form of Kant's statement. He clearly ought to argue in the Aesthetic that space itself, not merely the figure constructed in it, is somehow the product of a synthetic act and that therefore we can obtain knowledge of it *a priori*. Actually he claims to do this later, and the ground for this postponement must be simply his rather premature decision to deal with geometry and arithmetic before proceeding to the more complicated argument required to demonstrate the validity of pure physics. To enable him to do this, he definitely regards space in the Aesthetic as something given to intuition, not as itself a synthetic whole requiring the activity of thought and imagination for its proper apprehension. It is in fact regarded both as part of the mechanism of perception and as a given whole within which synthetic construction is possible.

Outer sense is thus a form-imposing faculty and the form which it imposes on the data which are its material becomes itself an object of pure intuition in abstraction from that material. This position is not really inconsistent, though it requires considerable development, which is forthcoming only at a later stage, to make it intelligible. Kant can, however, answer satisfactorily the problem of applied geometry, since whatever holds of pure intuition must equally be valid of empirical intuition which depends on it. But he can do this only by assuming that pure space is an entity into whose structure the geometer has *a priori* insight without the use of discursive thought; and this assumption must be regarded as only provisional, since it is inconsistent with the whole teaching of the *Analytic* and is subsequently corrected.

Indeed it must be admitted that full consideration of the nature and importance of synthesis should logically occur at the very beginning of the *Critique*, since it is the inspiration of the whole work without which the Copernican revolution would get nowhere; but to have put it there would have disturbed the distinction (which Kant believed to be important) between mathematics, physics, and metaphysics. Probably his adherence to this order of exposition is not due merely to his attachment to architectonic. The fundamental importance of the doctrine of synthesis became clear to him only in the course of his actual writing of the *Critique*, and he would therefore have had to begin again at the beginning with an entirely different form of exposition to give it proper emphasis. It is noteworthy that the section dealing explicitly with synthesis in the *Metaphysical Deduction*¹ is generally held to be late in composition.

We must admit, then, that the treatment of space in the *Aesthetic* is inadequate; but that of time is infinitely worse. It is necessary to point out here only (*a*) that time is obviously not a content in the sense in which space may plausibly be held to be one; (*b*) that therefore it gives rise to no synthetic *a priori* propositions, (*c*) that while it may be conceived as a condition of our drawing figures, it forms no element in the medium in which they are drawn.

Thus it is by no means comparable with space, and in the *Analytic* all attempt to treat it as being so is abandoned. Space and time are both forms of sense, not of thought, but there all resemblance between them ceases.

¹ B 102-B 105.

It would, however, be a mistake to suppose that these difficulties prove Kant's view of the nature of geometry and arithmetic to be essentially wrong, even though, as it stands, it is both misplaced and incomplete. What is really important is to remember that, for purposes of understanding the Metaphysical Deduction, we have to accept what Kant himself takes for granted at this stage, namely that I do in fact apprehend pure or non-empirical contents, space and time, as well as objects of empirical intuition (data of sense subject to space and time as forms). Without this assumption the distinction between general and transcendental logic which follows remains unintelligible.

§ 3

The metaphysical deduction depends on two distinctions of which Kant claims to be the first philosopher to appreciate the importance, namely, that between sense and understanding and that between general and transcendental logic.

The first requires no further explanation. The vital point about it is that, whereas sense is receptive, thought is spontaneous; this explains the distinction between the forms of sense and those of thought. A receptive form, such as a mould, can easily be conceived as capable of becoming itself an object of apprehension in abstraction from content; the forms of spontaneity, on the other hand, are bare functions of unity, that is, capacities of imposing unity of a specific kind on a manifold provided from elsewhere. They can be apprehended only as embodied in contents, and contents, except for an intuitive understanding, which ours is not, can be provided only by intuition.

The distinction between general and transcendental logic is more difficult. It certainly does not involve the notion of a special kind of philosophical or speculative thinking on Hegelian lines. Kant admits one set of rules and one only, valid of all thought whatever, namely the standard rules of logic set out in contemporary handbooks and expounded in his own lectures on that subject.

There is not the slightest ground for holding that transcendental logic involves the discovery of rules valid for 'synthetic' as distinct from 'analytic' thinking.

It must, however, be remembered that the handbooks¹ contained a good deal more than the formal rules of syllogistic logic.

¹ e.g. Meier. See above, p. 48.

They set out to give instruction as to the precautions to be taken to see that those rules were observed in different branches of inquiry where special difficulties, mainly psychological in character, were to be expected, and issued warnings against the types of fallacy prevalent in arguments concerned with special kinds of subject matter. This practice gives rise to the bad habit of describing practical rules for the guidance of the understanding in relation to a special subject as the logic of that subject. Now Kant claims to demonstrate in the *Metaphysical Deduction* that our employment of the forms of thought in general implies acquaintance with specific rules of synthesis or ways of combining concepts which he calls 'pure concepts of the understanding'. The discovery of these requires a transcendental investigation or reflexive investigation into the nature of our thinking with which general logic is not at all concerned, and for this reason alone he is prepared to describe the section of the *Critique* which makes this discovery as the first section of the *Transcendental Logic*. The remainder of the *Analytic* deals with the employment of these pure concepts in relation to the pure manifold of space and time in the production of valid synthetic *a priori* propositions. His statement here, as in the *Aesthetic*, is handicapped and rendered unnecessarily obscure by his initial failure to recognize the full implications of the notion of synthesis, especially in relation to inner sense, so that the section which deals with synthesis requires to be supplemented by what is only explained later in the *Critique*. This section is not, indeed, indispensable to a *prima-facie* understanding of Kant's general purpose, though his full view cannot be comprehended without it.

Kant's argument is as follows:

1. Understanding is the activity of thinking as distinct from perceiving.
2. To think is to enunciate propositions. (Kant held that these were always reducible to the subject-predicate form, but his view does not depend on this assumption.)
3. All propositions can be classified by reference to the kind of relation in which the predicate stands to the subject.
4. This classification reveals the pure concepts.
5. The pure concepts are therefore functions of synthetic unity in propositions.¹ Without their use, thought is impossible.

¹ Without empirical judgement there can be no thought. But judgement is prior to the formation of empirical concepts (see below, p. 176) and itself presupposes the existence of pure concepts.

6. Therefore propositions can give knowledge of reality if and only if it can be shown that the pure concepts are the necessary grounds of synthetic unity in reality as well as in propositions.

Kant's practical difficulty is that the sections which develop 5 and 6 are the Transcendental Deduction and the Principles, yet the point of the Metaphysical Deduction remains obscure unless 5 at least is established. He therefore compromises, not very successfully, by inserting the passage on synthesis,¹ whose chief importance lies in the attempt which it makes to reveal the connexion between the synthesizing activity of thought and the pure intuitions of space and time as the basis of pure physics. It already becomes clear that the notion of those pure intuitions as a kind of mould or container of phenomena formulated in the Aesthetic will not do. They are now regarded not as given wholes but as pure manifolds to be organized by the understanding through the pure concepts, and this process is analogous to the activity of thought in general in conceptualizing the manifold presented by (empirical) sensibility. Transcendental logic is thus mainly concerned with the possibility of applying the pure concepts to a pure manifold of space and time: general logic with the application of empirical concepts to the empirical manifold of sense. Indeed, all thinking is the introduction of a peculiar kind of unity into a given diversity in accordance with a rule, and all thinking, even that which is concerned with the analysis of concepts, presupposes synthesis.

All synthesis, however, is not thinking. Before concepts can be formed, the imagination (conceived as intermediate between sense and thought) must perform a preliminary synthetic act in the absence of which the *prima-facie* unity required for the formation of concepts will not be discoverable in the presented manifold at all. If we now concentrate on the kind of synthesis in which transcendental logic is particularly interested, we find an instance of it in counting. Counting has three characteristics:

- (a) necessity—which precludes any *a posteriori* explanation of it;
- (b) synthesis—it is a procedure according to a rule;
- (c) a basis of unity—the character of the rule is determined by a single underlying conception, that of the decad.

The pure concepts are extreme forms of (c), and it should be noted that (a) depends on (b) and (c).

¹ B 102–B 105.

The aim of transcendental logic may now be stated.

1. It is concerned with pure, i.e. non-empirical, thought.
2. The object of such thought can be nothing but the pure manifold of space and time.
3. This multiplicity must first be synthesized by imagination.
4. The result of this synthesis must then be further synthesized by understanding by means of the pure concepts.

It is the function of the Transcendental Deduction and the Principles to develop 3 and 4, and to show that the possibility of empirical thinking depends on the preliminary performance of these two syntheses, whether or not we are actually aware of performing them.

The true relation of the Aesthetic to the Analytic now remains to be stated. In the former space and time are conceived as exhibiting a kind of synthetic unity. They are neither mere multiplicity nor complete synthetic unity intellectually apprehended. They have, in fact, sufficient unity for the purposes of mathematics. Pure physics, however, demands the higher, that is, more abstract level of synthesis contemplated for the first time in the Metaphysical Deduction and which the remainder of the Analytic is devoted to expounding and justifying in detail. From this point of view, the contribution of the Metaphysical Deduction is simply to prove that the empirical processes of judging and conceptualizing have transcendental presuppositions, namely the categories as functions of unity in judging and conceiving. So far, however, the relation of categories to objects is not considered and therefore the special problem of the temporal character of phenomena does not arise. The *a priori* structure of thought and intuition has been examined: not that of things.

*The Synthetic Character of Objects in the Transcendental
Deduction of the Categories*

§ 1

The mind, we must now assume, is in possession of pure concepts or categories which have both a general and a specific part to play in the acquisition of knowledge. They make thinking in general possible since they are presupposed by the propositional forms which thought assumes, and they have also a special importance for transcendental logic, that is, for thought concerned with the possibility of knowing objects *a priori*.

For, if we are to maintain that any *a priori* thought about

objects, or, in other words, that pure physics is possible, we must prove, Kant holds, that both the thought and the object of it are non-empirical (independent of any actual sense-experience). Now the only objects which satisfy this condition are space and time, and the only concepts which satisfy it are the categories. This conclusion leaves him three major problems to deal with:

1. Since all thought whatever involves the categories, the latter must have general validity, for if nature as a whole were not subservient to the forms of thought, we could not think about it, just as we could not perceive it except in spatio-temporal terms.
2. If synthetic *a priori* propositions about nature are to be possible, it must be proved that the conformity to the categories required by 1 is not merely *de facto* but *de jure*. Hence it must be proved that empirical employment of the categories would be impossible unless their transcendental employment were known to be valid.
3. The nature and possibility of such transcendental employment must be examined, i.e. (a) the exact nature and necessity of the relation between the categories as pure concepts to the pure manifold of space and time must be investigated; (b) the employment of each category must be justified.

The aim of the Transcendental Deduction is to deal with 1 and 2: the Transcendental Schematism is concerned with 3 (a) and the Analytic of Principles with 3 (b).

§ 2

Kant's procedure in the Deduction of the first edition, after an introductory section in which he expounds its necessity and difficulty, is as follows. He first takes the activities by which psychologists explain our conscious thought (Apprehension, Reproduction, and Recognition) and shows that each of them has a pure, or transcendental, counterpart. Further, he demonstrates that empirical thought depends on the positing of an object as well as on the existence of a self-conscious self (empirical apperception): and that these too have their counterparts on the transcendental level (transcendental object and transcendental unity of apperception); finally the two levels are related to one another, and it is shown that the empirical actually depends for its possibility on the transcendental unity of apperception operating with the categories.

This completes the Deduction, but Kant attempts to make his point more clearly in a further section, in which he briefly goes over the same ground again, starting with the synthetic unity of apperception as the basis of all coherent thought.¹

I do not propose to analyse the argument of the Deduction in any great detail. It is sufficient for my purpose to emphasize the complete interdependence in Kant's development of his theme of the notions of synthesis, time, and phenomenal objectivity.

The Argument of the Deduction in the First Edition

§ 1. *Introduction* (A 84-95; B 116-29)

The Metaphysical Deduction has proved that we possess concepts which are pure and not derived from experience. The evidence for this is the fact that these concepts, or categories, are presupposed in all propositions, and since they are the basis of all thought, they cannot be derived from experience by means of thought. The next requirement is to show that these concepts, though not derived from experience, are none the less valid of it. Such a demonstration is what is called a deduction, and in this case it must be an *a priori* deduction since no empirical evidence can give more than a *de facto* claim to validity, and this would not satisfy the claim of pure physics to enunciate valid synthetic propositions *a priori*. Hence the psychological investigations of the empiricists cannot by themselves provide the proof which is required.

It must also be admitted that the problem is more difficult than that of the Aesthetic, for there, when once it is granted that space and time are the forms of all our immediate awareness, the validity of applied geometry is *ipso facto* demonstrated, since whatever is perceived must be spatial and temporal, and therefore subject to the laws of geometry. But the admission that the categories are forms of thought does not in itself necessitate the conclusion that objects of intuition must be subject to them, since it is at least possible that our spatio-temporal intuitions might be independent of the categories, as Hume supposed that they were. Perception

¹ It is this section which is developed into the Deduction in B. No firm line can be drawn between the so-called subjective and objective deductions. In principle, the former takes its start from facts admitted by empirical psychology and works out their transcendental implications, whereas the latter concentrates on the possibility of thought, that is of judgement. They cannot, however, be really distinguished in Kant's exposition, and there is no point in attempting such a distinction.

of succession does not obviously imply the validity of the causal axiom.

This difficulty can be overcome only by demonstrating that our capacity to apprehend *sensa* as related to objects¹ and not merely as disconnected and chaotic is inexplicable on strict empiricist grounds and therefore demands a transcendental basis. It must be proved that knowledge of the validity of the categories in respect of phenomena is an indispensable condition of any account of the nature of our empirical thinking.

§ 2. *The Threefold Synthesis* (A 95–A 114)

Kant's aim is to show the *a priori* conditions on which the possibility of experience rests. His method is to take the results of empirical analysis for granted and show in every case the necessity for parallel *a priori* synthesis on which empirical syntheses depend. This process eventually reveals the necessary objective validity of the categories as well as the synthetic character of the physical world.

Two points especially require to be noticed to make the argument clear:

1. It is taken for granted that our apprehension is subject to time in the sense previously noted.² Perception is supposed to consist of a temporal series of spatial (but non-temporal) images, that is, to be cinematographic. The spatial unity is given by synopsis (identical, I think, with what is called imagination³ in the *Metaphysical Deduction*).
2. The three syntheses are not independent. The third presupposes the second and the second presupposes the first. Together they are an account of the activity of the understanding in the production both of the empirical and *a priori* knowledge.

The synthesis of apprehension in intuition

- (a) General Remark (see 1 above), paragraph 1.
- (b) Empirical Synthesis, paragraph 2.
- (c) Transcendental Synthesis, paragraph 3.

The empirical point is the familiar one that to perceive a large

¹ The deduction given in the *Prolegomena* develops this point by the rather misleading distinction between judgements of perception and judgements of experience. Ak. iv. 298 ff.

² See above, p. 159.

³ See above, p. 170.

object as *one* I must somehow combine in a single whole data which I apprehend successively. The transcendental counterpart is that the ideas of space and time demand a similar act.

Both acts are plainly synthetic in character.

The synthesis of reproduction in imagination

- (a) Empirical Synthesis, paragraph 1.
- (b) Transcendental Synthesis, paragraph 2.
- (c) Relation of reproduction to apprehension, paragraph 3.

This is explicitly only a development of the previous synthesis. The association of ideas is here accepted as a fact, from the existence of which Kant infers that there must be some regularity in our impressions to make association possible. The transcendental argument is that we can maintain *a priori* the impossibility of any knowledge, even of the characteristics of space and time apart from the admission of an *a priori* synthesis corresponding to the empirical faculty of association.

The synthesis of recognition in a concept

The first two syntheses are in themselves relatively unimportant. The third is vital to Kant's whole view of objectivity and is so difficult to follow that it must be analysed in greater detail. We may observe in advance:

- i. That here also there is first an empirical (A 103-6, end of 1st para.) and then a transcendental argument (to the end of § 3, A 110).
- ii. That the aim of the whole section is to connect the empirical activities with the *a priori* synthesis of the pure understanding, and to show that the possibility of the former depends wholly on the performance of the latter. That this will be the case is already to be expected as a result of the first two syntheses.
- iii. That the central theme of the Analytic and also the general character of the deduction begin to emerge at this point with the introduction of the notion of experience as involving objects and not merely intuitions.

Empirical synthesis (A 103-A 106)

First paragraph (A 103). No serial process, such as counting, can possibly be performed except by an agent who recognizes at least implicitly the character of the act of synthesis which it involves.

Reproduction alone will not give an explanation of any such process.¹

Second paragraph (A 103-4). Reflection shows that all formation of concepts really (though not obviously) involves an act of just this kind. For general ideas, house, dog, &c., are formed by abstraction from particulars which are apprehended successively. For this, apprehension, reproduction, and recognition are all necessary—but the essential point is that the complete process involves, though covertly, an awareness by the agent of his own act which is essentially of the same kind as that required for counting. Concepts therefore presuppose synthesis, and they are presupposed by all knowledge of objects.

Third paragraph (A 104). The last statement requires development. It is evident that we do 'refer ideas to objects' in asserting that colours, tastes, &c., belong to things, and are not just states of our consciousness. But when we ask what the 'object of ideas' can be, the only possible answer seems to be a Lockean substance, a 'something, I know not what' or unknown x , since by definition it does not correspond to any ingredient in our knowledge.

Fourth paragraph (A 104). The function of this unknown is to unify our sensa. Apart from it they would be quite haphazard and disconnected. Data of sight, taste, smell, &c., are combined in the concept of an orange, and the combination is conceived as objective, or necessary.

Fifth and sixth paragraphs (A 105-6). The ground for this unification cannot be discovered in x , since we have, as already stated, no immediate acquaintance with x . Hence it must be looked for in our own consciousness, and we must admit that we are constrained to consider data as combined in objects by a necessity which is internal to ourselves. We produce synthetic unity in our own experience (though of course we could not do so unless that experience were of such a kind as to make the synthesis possible). Further, we produce this unity by a process of combination according to a rule. The nature of that rule is not yet known, but the general idea of it is given by consideration of something which we undoubtedly construct, such as a triangle. Here it is not difficult to see that the awareness of the unity of the object depends on awareness of the synthetic character of the act required for its construction. Apart from this, it disintegrates into three straight lines, or any other possible analysis of the data contained

¹ See above, p. 170.

in it. A similar argument holds of the notion of body. Thus it appears that all empirical thought presupposes a unity of apperception, or self-conscious unity of the thinker, apart from which there could be no concepts and therefore no thought at all.¹

Transcendental Synthesis (A 106–A 110)

Paragraphs 1–4 (A 106–8). Empirical thought has now been shown to depend on the self-conscious unity of the subject. But this consciousness of unity cannot be empirical or immediate. Mere observation or inner sense, however defined, can give no awareness of a necessary unity either of self or of anything else, and I cannot possibly discover the ultimate ground of synthetic unity by simple inspection. I can discover it only inferentially, by realizing that the possibility of any experience depends on the existence of it.

We are thus brought to the doctrine of a transcendental unity of apperception which is the only possible explanation of that empirical unity of self-consciousness which has already been proved necessary for all empirical thought. That such a transcendental unity is required to make possible even our ideas of space and time can easily be seen by reference to the preceding sections.

Pure self-conscious synthetic activity is thus the *a priori* ground of all concepts, just as pure intuitions of space and time are the ground of empirical intuitions.

In fact the existence of an active self-conscious subject synthesizing its experience in accordance with *a priori* laws which spring from its own nature is the only possible basis for the activity of empirical thinking which admittedly does happen.

Paragraph 5 (A 108–9). The ground for maintaining the existence of a transcendental unity of apperception is that only thus can the reference of our thought to objects be made possible. We may now again ask exactly what 'object' is to mean, and we can now answer that it is the correlate of this transcendental unity, namely the transcendental object.² For the moment this can only

¹ This is really only a rather untidy anticipation of F. H. Bradley's criticism of empirical psychology (*Ethical Studies*, p. 36). 'Mr. Bain collects that the mind is a collection. Has he ever thought who collects Mr. Bain?' It is a familiar criticism of Hume's doctrine of discrete *sensa* (which Kant accepts) and Hume's doctrine of the self (which Kant rejects as incompatible with it).

² A great deal has been made of the fact that the chief passages in the first edition in which mention is made of the so-called Transcendental Object were

be described as non-empirical and = x , i.e. unknown. It 'refers only to that unity which is to be met with in any manifold of knowledge which stands in relation to an object'. What it is can

omitted by Kant in his revision for the second. On the strength of this it is sometimes argued:

1. That in the section on the Paralogisms in A, the transcendental object is explicitly identified with the thing in itself. (This passage is actually retained in B.)
2. Almost all mention of the transcendental object is suppressed in B.
3. This shows that by 1787 Kant was losing his faith in the existence of things in themselves and was attempting to replace his pre-Critical subjectivism by a thoroughgoing phenomenalism.

This seems to me to be inconceivable. It is true that Kant's theory of knowledge admitted of a development in which the doctrine of the thing in itself would have been superfluous, but the whole argument of the Second and Third *Critiques*, to say nothing of the *Opus Postumum*, makes it perfectly clear that Kant himself remained faithful to it to the end. He could not do otherwise without making nonsense of the entire Critical Philosophy.

This, however, does not mean that the term itself or Kant's employment of it can be regarded as felicitous.

The difficulty in respect of it arises mainly from the account which he gives in the first and leaves intact in the second edition section on the Paralogisms of the Transcendental Employment of Concepts. He wishes to distinguish (quite unnecessarily) between two methods of employing the pure categories, both of which must be condemned by Criticism as illegitimate.

The first is their employment in relation to objects of experience beyond the limits which experience itself can justify (e.g. the assertion or denial of the infinite divisibility of matter). This is transcendental. The second is their employment in relation to non-empirical objects as such (e.g. God). This is transcendent. Having made this distinction, he tends, not unnaturally, to describe the real but non-empirical substratum of physical objects as a transcendental object. In fact, in terms of this distinction it might equally be described as transcendental or transcendent, which in itself demonstrates the futility of the distinction.

This tiresome use of the phrase in the Paralogisms is connected with, but distinct from, Kant's employment of it in the Deduction and the passage on Phenomena and Noumena (both in A only). There it stands for the 'bare correlate of the synthetic unity of apperception'. It is the *a priori* element in phenomena viewed in abstraction from their material content. This is in accordance with his original account of transcendental knowledge as concerned not with objects but with our knowledge of them in so far as this is possible *a priori*.

In this sense, too, the transcendental object is not in itself a possible object of knowledge. It denotes simply the formal characteristics which render intelligible the manifold of pure or empirical sensibility, the ground of synthetic unity in phenomena.

What happens in the illegitimate employment of reason is that this purely formal ground of synthetic unity is hypostatized as if it were something efficacious and substantial though non-empirical in character, and we thus come to credit ourselves with constitutive knowledge by means of pure reason (i.e. knowledge of the thing in itself, now identified with the transcendental object).

This hypostatization is especially unfortunate in the case of the idea of the self with which Kant in the Paralogisms was mainly concerned. For it is only too easy to confuse the real self with the transcendental unity of apperception, and to suppose that acquaintance with the wholly formal unity of synthetic activity

be specified only when we have discovered what are the principles of synthetic unity in accordance with which self-consciousness operates.

The Categories (A 110–A 114)

The principles, or functions of unity, are in fact the categories, for they are required for thought in general and are therefore the indispensable conditions of knowledge. But it is now clear that they must also be embodied in objects, since these are to be regarded as synthetic unities. Hence it follows that the transcendental or non-empirical objects of our thought must be subject to the categories, and the deduction of them is thereby accomplished; it has been proved that the categories must be valid of phenomena and the remainder of the *Analytic* shows how this is possible. Phenomena are non-empirical in the sense that they are not empirically intuited but known, as we find later, by imagination operating through the categories and the pure forms of intuition.

Imagination and Time in the Transcendental Schematism

§ 1

The place which imagination as conceived in the section on schematism fills in Kant's final view of the nature of the physical world is hard to understand without some further inquiry into the three main questions of the *Analytic*, namely

- (1) Kant's theory of judgement,
- (2) The synthetic character of space and time,
- (3) The position of synthesis in Kant's general doctrine.

The situation here is again complicated by Kant's tendency to pass from general to transcendental considerations without drawing attention to the transition, and by his failure ever to state fully what his doctrine of imagination is.

Before these points are considered, however, it should be noted that the term 'schematism' itself throws a good deal of light on the position which he is trying to establish. A schema¹ is simply a plan or design such as the ground plan or elevation of a building. Thus it may without difficulty be thought of as standing midway

which is implied by the 'I think' which accompanies all my representations constitutes immediate awareness of a transcendent or non-empirical self.

But it was a misleading piece of terminology, and Kant did well to abandon it almost completely in the second edition.

¹ See article in *O.E.D.*

between the general idea 'house' and a particular construction of bricks and mortar. It is general, in that the number of houses which can be built to a single plan is infinite, yet, as contrasted with the notion 'house', it is particular. Furthermore, and this is important to Kant's argument, while it is itself an intuitable particular inscribed on paper it also provides a rule or principle in accordance with which the builders must act. To explain how we produce such schemata is, he believes, impossible; at any rate he has no account to offer of it. They must be conceived as products of imagination which is here productive and not merely reproductive of past experiences. It is clearly a synthetic activity, and we may therefore expect to find that the empirical use of it, which is all that we have so far considered, is ultimately dependent on a transcendental synthetic activity, and this turns out to be the case. In fact Kant's starting-point is that if we start with any general notion and aim at producing a concrete instance of it, we are bound to evolve a schema to mediate between the two. If we now apply this notion to general logic, we find that the middle term in the syllogism may plausibly be regarded as the schema which mediates between the major and minor, and hence the faculty of 'judging', that is of discovering the appropriate middle term, is directly connected with imagination regarded as a natural gift which can never be taught.

To this it may well be objected that no real distinction between concepts and schemata can possibly be drawn on these lines. There are no general ideas which are foreordained to be always middle and never major or minor terms. To argue thus, however, would be to miss Kant's point. His conception of the schema is essentially functional. A plan to a person who does not know what it is for is not a plan at all but a picture, and the whole doctrine of the syllogism takes it for granted that the minor is not subsumable under the major without the intervention of a middle term. It is, of course, possible to use plans or maps as decorations, but that is not to use them as plans or maps. They are then no longer employed as schemata but as ornaments.

§ 2

After this preliminary investigation we must consider the special problem raised by the character of the pure concepts of the understanding. It is at once clear that if these are to have any application to reality it must be possible to subsume particulars

under them. A concept with no concrete instances is for Kant empty. We must therefore ask how such subsumption is possible, since it clearly presents a difficulty which the subsumption of particulars under empirical concepts does not. This difficulty arises from the complete absence of homogeneity between pure concept and concrete particular. Whether Kant's argument here is sound is exceedingly dubious, but in fact it depends on his theory of the formation of empirical concepts and cannot properly be considered apart from this. Such concepts, e.g. house, are, he believes, all formed by abstraction from particulars. They are thus never purely intellectual, but have always a sensuous element which makes the subsumption of particulars under them possible. They are thus potential schemata, and he would (perhaps rightly) have regarded 'house-ness' and 'horse-ness' as mere monstrosities. Pure concepts, on the other hand, are wholly intellectual, since they are bare forms of thought and utterly different from sensible particulars. How then can the latter conceivably provide instances of them? That they must somehow do so is already proved by the Deduction since, in the absence of such categorical determination of experience, all knowledge of objects and therefore all thought has been shown to be impossible.

Thus the problem is not 'Do the pure concepts require schematization?' but rather, 'Since the pure concepts must be schematized, what are the schemata which must be employed to make their employment possible?'

Clearly this is a problem for transcendental logic, since the whole possibility of physical knowledge *a priori* depends upon the answer to it. The argument of the Deduction should convince us that an answer is to be found and has also given a clear indication of where to look for it, but that is all. We may expect to discover that there are transcendental as well as empirical schemata; that the former are products of transcendental as distinct from empirical productive imagination; and that the material for them is provided by the pure intuitions of space and time. It must also be noted that here as elsewhere there is a sharp contrast between the situation for general and for transcendental logic. The former, since it takes no account of content, can never determine *a priori* what the schema of any given concept must be. This, as we have seen, is a matter for empirical judgement only. Transcendental logic, however, is wholly *a priori* and must therefore say of its pure concepts that there is one way

and one only in which their schematization is possible. It must in fact determine not merely that but also how their application to phenomena is possible.

§ 3

In the Aesthetic space and time are conceived as given. It is assumed that they are formal intuitions as well as forms of intuition, and that their essentially synthetic character needs no discussion at that stage.¹ In the course of the Deduction, however, it has become apparent that this account is too simple to serve the purposes of transcendental logic; and in particular the problem raised by the nature of time is by now clearly fundamental to the whole Critical view. We are in fact compelled to ask how space and time are themselves constructed, though it must be remembered that this inquiry is logical and not historical in character and is therefore in no way inconsistent with their givenness in the Aesthetic.

Now time is the form of inner sense. All our awareness is temporal, and anything which can be an object to us must be capable of being apprehended in a specific way. In fact the physical world, if we are to know it, must be temporal, since, if it were not, it would be no object of possible experience for us and could therefore have no valid synthetic *a priori* propositions formulated about it. A timeless real could be for us an object of thought, since it involves no contradiction. It could never be an object of knowledge, since it would lack the intuitional element on which the possibility of knowledge, as distinct from belief, must for us always depend.

But the pure concepts are wholly intellectual and therefore completely divorced from time (which is a form of sense). They must therefore somehow be brought into relation with it to render the subsumption of phenomena possible. Hence the function of the transcendental schemata is to mediate between temporal phenomena and timeless categories and thereby exhibit the necessary realization of the latter in the former.

Time itself is synthetic as well as intuitional. Hence what is required is an exposition of its nature designed to show that all the categories are in fact involved in it, and that therefore they are necessarily valid of all phenomena which are subject to it, i.e. of

¹ The synthetic element in geometry is provided by the act of constructing the figure, not by the medium in which it is constructed.

all objects of possible experience. The transcendental schemata are therefore ideas produced by the faculty of transcendental productive imagination which provide a rule in accordance with which time itself and phenomena *qua* temporal admit of being imaginatively constructed.

We must now return to the categories set out in the metaphysical deduction. There are twelve of them, but each group of three can properly be considered as a whole, since the units which compose it are not independent of one another. We are left, therefore, with quantity, quality, relation, and modality as the concepts which require schematization. It is understood that the articulation of these (unity, plurality, &c.) will be apparent in the corresponding schemata, and we find that in the case of the categories of relation these articulations are so important and difficult to appreciate that they receive in the Principles separate and lengthy consideration (Analogies of Experience).

The schemata which mediate between these categories and phenomena are set out in the following table; the last column indicates the section in the Principles in which each is fully treated:

		<i>Schema</i>	<i>Treated in</i>
1. Categories of Quantity	Unity Plurality Totality	Number	Axioms of Intuition
2. Categories of Quality ¹	Reality Negation Limitation	Degree	Anticipations of Perception
3. Categories of Relation	Subject and predicate Ground and consequent Reciprocity	Permanence Cause Necessary simultaneity	Analogies of Experience
4. Categories of Modality	Possibility Actuality Necessity	These are not strictly categories at all and have no schemata	Postulates of Empirical Thought

A full explanation of this table would anticipate the argument

¹ Kant is not here depending on the arbitrary description of the positive and negative character of judgements as their 'Quality' in the traditional Logic. His point is that the notion of intensive quantity (degree) really does express the combined categories of being, not being, and limitation, and that these actually do correspond to the positive, negative, and infinite judgement forms. The term 'quality' is accidental and unimportant.

of the Principles which follow, but some preliminary elucidation may be useful.

1. *Quantity*. Space and time (and therefore all phenomena *qua* temporal) are what Kant calls extensive magnitudes, that is wholes formed by the successive addition of parts. They therefore require for their apprehension the concept of number, which Kant conceived as involving an intuitive element. As such it can be regarded as the schema which mediates between the pure concept of extensive magnitude and the concrete notion of a physical body as a whole consisting of extended parts.

2. *Quality*. Anything real must possess degree as well as extension. This is obvious in the case of secondary qualities. Any shade of red has an intensity which could always be greater or less than it actually is, and which may therefore be conceived as lying between complete reality and complete negation. The application of this idea, however, to time and phenomena is complicated.

3. *Relation*. The connexion between schemata and categories needs no special explanation. It would have been more helpful if Kant had not substituted the names of the schematized categories for those of the pure categories in the Metaphysical Deduction, but his meaning is not in doubt. The first category gives the bare idea of something which is essentially subject and not predicate. To actualize this we must conceive a physical substance permanent in time, &c. The complete interdependence of the three relational categories becomes clear in the course of the Analogies of Experience.

4. *Modality*. The categories of modality are, in Kant's view, categories only by courtesy. They deserve far more careful treatment than he was in a position to give them.¹

§ 4

It is a pity that Kant himself gives no satisfactory analysis of imagination in spite of its extremely important function both in the schematism of concepts and indeed throughout the *Critique*. In the absence of any such authoritative pronouncement, however, some attempt must be made to find out what his position actually was. At the level of empirical psychology the situation is easily understood. Imagination is simply the faculty by which we create images for ourselves in the absence of objects. It is thus naturally

¹ See below, p. 204.

differentiated into (a) reproductive imagination, which recreates impressions which have been perceived previously. This, when accompanied by self-consciousness, is practically indistinguishable from memory, (b) productive imagination which creates impressions. This faculty is active

- i. in the amplification of actual impressions;¹
- ii. in fantasy and day-dreaming;
- iii. in deliberate artistic creation.

Corresponding to this empirical faculty, we have also transcendental imagination which differs from it not in the manner of its operations but simply in the subject-matter with which it works, which is the pure manifold of space and time as distinct from empirical data of sense. The precise nature of this operation is exceedingly difficult to follow, but Kant believes that he has expounded it in the Schematism and Principles and has proved (a) that it provides an indispensable link between pure concepts and pure intuitions, (b) that in the absence of these transcendental elements empirical thought and empirical self-consciousness would be impossible.

Up to this point what he wants to maintain is clear enough, though the arguments by which he supports his view are far from easy. But there is a more serious difficulty than that of mere complexity in the doctrine of transcendental imagination which arises from the dual function which the faculty has to perform. Imagination, we are told, is a faculty distinct from sense on the one hand and thought on the other. By its schematizing activity it provides a necessary link between them. Further, it is capable of doing this because as a faculty it partakes of the character both of thought and of sense. Its products are both synthetic and intuitive.

At this point Kant really ceases to speculate about it, although the resulting situation is clearly unsatisfactory. It admits of development in two directions, each of which is inconsistent with Kant's claim to have produced a view by which the requirements of both rationalism and empiricism are satisfied.

A. It may be argued that Kant's doctrine of imagination really amounts to an admission that the hard-and-fast distinction between sense as receptivity and thought as spontaneity has broken down. The third faculty is nothing more than a *deus ex*

¹ e.g. Hume's missing shade of blue (*Treatise*, Part I, Sect. 1) and many other instances cited in works on Gestalt psychology.

machina, and, while it is supposed to create a bridge between the other two, it in fact supersedes them. If this is the case, the Critical Philosophy needs drastic reconstruction. It should properly set out from the notion of a self capable of generating its own objects by a fundamental synthetic process and show how the Kantian machinery of cognition arises necessarily in the course of the self's development. It is evident that such a process, if it could be carried out, would vastly increase the rationalist as against the empiricist element in the view. It would also explain, as Kant himself was never able to do, the articulation of the fundamental activity of synthesis into specific forms of thought and sense, and we may argue that he himself foreshadowed it in much of his mature work. There is, however, no evidence to show that he actually accepted it, and he could not have done so without completely revising his views both on science and on ethics.

B. It may be maintained (on more or less positivist lines) that the whole doctrine of imagination is in the end simply a psychological hypothesis. The multiplicity of forms both of sense and thought is then a purely empirical matter, and any *a priori* account of their nature and origin must itself be hypothetical.

This may be the case, but it is certainly not what Kant himself believed.

In short, the whole doctrine of imagination, while it is essential to the view which Kant wished to maintain, shows very clearly one of the main problems which any such view must face, and must at least give rise to a suspicion that the nice adjustment between rationalism and empiricism which it claims to establish is in fact impossible to achieve.

How is pure physics possible? The Analytic of Principles

§ 1. *Axioms and Anticipations*

If we are to follow the argument as distinct from the general thought of the Principles, it is essential to remember the doctrine of the Schematism. The application of this in the sections under discussion is fairly straightforward. Number, we have been told, is the schema of quantity: it mediates between the abstract non-temporal category and the pure manifold of space and time and thus makes possible the application of the former in the first instance to the latter as such and in the second to all representations *qua* spatio-temporal. The Axioms explain this mediation.

Any spatial whole, Kant maintains, must be capable of generation by the successive addition of part to part: so can any extent of time. Indeed, one of the essential characteristics of space and time considered as objects of thought is that they admit of this kind of generation. It has already been observed that they are synthetic in character and this fact of numerability is the first kind of synthesis which is realized in them, corresponding to the first group of categories (quantity).

Presumably what Kant has in mind is that any solid can be conceived as a synthetic whole composed of an indefinite number of very thin layers, and its volume can be determined by regarding it in this manner. Space (and also time) regarded as objects of thought are therefore *tota synthetica*, or wholes of parts. This is not really inconsistent¹ with the teaching of the Aesthetic, which maintains that as objects of sense they are *tota analytica* or wholes which are antecedent to their parts. It is meaningless to ask what they are really or in themselves, for in themselves they are nothing.

The argument of the Anticipations is identical in principle with that of the Axioms, though it is slightly harder to follow. The categories here are those of existence, non-existence, and limitation, grouped together perhaps not very fortunately under the title quality.² The schema which mediates between these and the pure manifold of time is that of degree. Kant's point appears to be that any degree of intensity may be regarded as a synthetic whole of intensities, just as any extensive magnitude may be regarded as a synthetic whole of quantities. This applies to time itself in the sense that empty time is a bare abstraction or limiting concept. The filling of time with events is something essential to its very existence, and the quality of this filling is the degree of reality which those events possess.

This argument is not very plausible or even intelligible apart from Kant's detailed view of the nature of the physical universe. He did in fact hold (1) that there was no empty space, (2) that matter occupied space intensively as well as extensively, (3) that the essence of physical things consisted in their being centres of force.³

Certainly it seems odd to maintain that time itself (and therefore

¹ See above, p. 166.

² See above, p. 183, fn.

³ See above, p. 60, on the *Monadologia Physica*. There is no reason to suppose that Kant retracted the physical view which it contained, and indeed the illustrations in the Anticipations are themselves good evidence for maintaining that he continued to hold it.

all phenomena in it) is synthetically intensive as well as extensive in character, but this is what Kant's argument obviously requires, and he does actually claim that it is true.

§ 2

The distinction between the Axioms and Anticipations on the one hand and the Analogies on the other is of some importance. Briefly it is that phenomena, as far as the categories of quantity and quality are concerned, are themselves static. The fact that as wholes they have a temporal duration of their own is disregarded and we are concerned simply with their synthetic character as wholes. It is only in the Analogies that they are considered as wholes in time. Thus when a billiard ball is described as a synthetic whole, what is meant is that it possesses a specific character in virtue of which we are able to formulate propositions about it. Nothing happens to the billiard ball when we do this. The process occurs wholly in us. Suppose, however, that the ball is in motion, we have at once a different and more complex situation to deal with. The relations of the ball to other objects, and for that matter to its own qualities, have now to be conceived as synthetic in character in spite of the fact that they are independent of our awareness in a sense in which the syntheses already considered are not. The problem of the Analogies arises from our concern with an objective as well as with a subjective time-sequence, whereas in the earlier categories the sequence was subjective only; and for this reason, Kant maintains, the principles expounded in the former differ in two important respects from those of the latter. In the first place they require a discursive as distinct from an intuitive proof, and in the second they are regulative and not constitutive in character. The point here is that the argument of the Axioms and Anticipations holds without qualification of all data of sense whether pure or empirical. Secondary as well as primary qualities necessarily possess some temporal extension and some degree of intensity. They cannot, however, properly be conceived either as substances or causes. Hence the distinction between mere impressions and physical objects now becomes of vital importance since the latter only are subject to the principles of the Analogies. The problem of physical science is to discover the detailed character of phenomena, and this can be done only experimentally. All that the principles claim to do is to establish purely general rules which make such experimentation valid.

Furthermore, the proof of such rules, since they refer to objects, must be transcendental. It must show that the possibility of experience depends on the determination of objects by them, and this is what Kant means by a discursive proof. It should also be observed that substances and causes do not admit of construction in the same way as extensive and intensive magnitudes, but as this line of thought is fully developed in the Analogies themselves, it is unnecessary to explain it in advance. I shall here consider only the distinction between the subjective and objective time-sequences, which is in fact far less difficult than is sometimes supposed.

Kant is not suggesting that there really are two time-sequences, one in me and one in the physical world. This would be nonsense. All events occur in one and the same time. His problem, which is a real one, can be made clear by an example. Suppose that a choir is singing about 300 yards away from me and that this event is being broadcast. If I turn on the radio I shall hear the actual choir as an echo of the wireless. I might infer from this order of experience that the actual singing was subsequent in time to the broadcast reproduction, but if I did, I should be mistaken. In Kantian terminology the order of apprehension is A-B (broadcast-singing), the order in the object is B-A (singing-broadcast). No physical problem arises out of this discrepancy. It is quite simply explained by the fact that sound travels rather more slowly than light. There is, however, a philosophical problem as to the manner in which we come to know about the physical as distinct from the psychological order of events and it is with this that Kant is concerned in the Analogies.

§ 3. *Analogies of Experience*

Of the three Analogies (dealing respectively with permanence, succession, and coexistence) the second is easily the most important and is actually the final answer to the question 'How is pure physics possible?' I shall therefore deal with it at considerable length and give only a brief account of the first and third.

General Principle of the Analogies (B 218-B 224)

1. B 218-21. Statement of the general line of the argument which is to follow.
2. B 221-3. Distinction between the mathematical and dynamic categories.
3. B 223-4. Reminder that the 'objects' with which the

Analogies are concerned, although they are reality as contrasted with the data of empirical imagination and sensibility, are nevertheless spatio-temporal and therefore phenomenal.

This introduction suffers, as Kant's introductions usually do, from extreme over-condensation. Some obscurity arises also because it takes for granted much of what follows as well as of what precedes it. What Kant wants to maintain is:

1. The synthetic *a priori* propositions of pure physics which depend on the categories of relation provide rules of procedure for scientific investigation and do not by themselves yield knowledge of the characteristics of objects. They tell us, indeed, that there must be an *x* which stands to A in exactly the same relation as B stands to C. But this information does not enable us to state the nature of *x a priori* in the way in which a similar proportion sum in mathematics does.
2. These rules of procedure are valid only if there are necessary time-relations.
3. Such relations can hold only between objects. Relations between empirical sense-data, it has already been maintained, are themselves merely empirical and are objective only inasmuch as they are recognized as dependent on a transcendental system known *a priori*.
4. The synthetic nature of time is a presupposition of such a system, since it is a necessary condition of the transcendental apperception on which empirical apperception depends.
5. The synthetic nature of time is conceivable only if objects exhibit the three modes of time, since empty time is not an object of possible experience.
6. Therefore objects must provide instances of necessary permanence, succession, and coexistence.

This doctrine is supported by two other lines of argument which Kant sometimes employs. The first approaches the problem from the side of judgement and is as follows:

1. 'The stove is hot' and 'The fire warms the stove' are both judgements of experience, in that they assert necessary relations between things and not merely *de facto* conjunctions of sensa.
2. The significance of such judgements depends on the existence

of objects subsumable under the schematized categories of substance and cause.

3. Such objects must exist, since their existence is a necessary condition of the idea of time itself and therefore of all apperception.

The second depends on the doctrine of inner sense, and runs:

1. All my ideas are successive.
2. The possibility of apperception requires that they should be referable to objects.
3. Such objects must themselves be phenomenal (since they provide a basis of necessary synthetic unity, whereas acquaintance with things in themselves, if it were possible at all, must always be empirical only).
4. Hence they must be spatio-temporal and, as such, exhibit the three modes of time.

The argument from judgement is most prominent in the Prolegomena: that from inner sense in the Second Analogy.

The essential point is that objective apperception (which the Deduction has shown to be a condition of possible experience) depends on the synthetic character of time, which is itself dependent on the existence of objects having necessary temporal relations. The precise character of these relations remains to be demonstrated in the Analogies themselves.

First Analogy

The argument here, whether valid or not, is straightforward. It is that the permanence or conservation of *something* in nature is a necessary condition of the idea of time itself. No mere succession of evanescent states could give rise to such an idea unless they were recognized as states of a permanent self. But, Kant maintains, we have no awareness of any such self, and therefore the states must admit of being referred to something else, though we cannot know *a priori* what that something is. Empirical science alone can seek to determine whether it is, e.g., matter, motion, or energy. But as the name substance is usually given to the permanent in reality, we are entitled to maintain *a priori* the truth of the proposition with which the Analogy opens.

Second Analogy

The Second Analogy has suffered the same fate as the Deduction of the Categories in the first edition. It is almost unanimously condemned as a more or less haphazard collection of five or six

different proofs of the same proposition hurriedly thrown together for publication. Certainly it is not a happy piece of exposition even by Kantian standards, which in this respect are not very high, but I do not believe that it is as muddled and repetitive in substance as it appears on a first reading to be.

Before we attempt to analyse it there is much to be said for asking what, in the light of the contents of the First Analogy, we should expect the Second Analogy to contain. For although the form of Kant's exposition is often defective, no one is likely to deny that his belief in the importance of architectonic, that is of orderly and systematic statement, was extremely lively. This leads us to anticipate:

1. An introductory passage added in the second edition.
2. The proof of the principle.
3. Some explanatory remarks on the meaning of the principle in relation to experimental science.

All these are in fact present. The proof is officially given on B 246 and 247¹ (*Der Beweisgrund dieses Satzes . . . einer solchen Erfahrung ist*), though it actually begins rather earlier on B 244 (*Zu aller Erfahrung . . .*). There is an introductory section added in B which gives a condensed account of what the proof is to be, and the concluding pages, B 247–B 256, are occupied with explanation and development. What, then, is the point of the argument from B 234 to B 245? One would expect it to deal with special difficulties in respect of the Second Analogy which do not arise in the case of the First and which must be cleared up before the demonstration can be regarded as satisfactory. I believe that this is actually what it sets out to do, though it performs its work in a singularly obscure and clumsy manner.

In order to elucidate the argument we must bear in mind that the nerve of proof in the Analogies from Kant's point of view is that necessary temporal relations between things are a condition of the possibility of time itself; that the First Analogy has demonstrated the necessity for a permanent in phenomena in contrast to which the succession of their determinations can be apprehended; and that the Second Analogy proposes to go beyond this and to prove that the nature of time (and therefore the possibility of experience) depends on the validity of the causal axiom, that is, on the subjection of objects to a rule of temporal succession.

¹ References from the text are given here as the division in paragraphs is unsatisfactory.

Now on Kant's own view this contention raises several difficult problems, since it seems at first sight as if the First Analogy has proved rather too much. We might ask:

1. Granted that succession as well as permanence is involved in time, why must that succession be necessary? Since permanence is already established, one might suppose that random succession would be sufficient.
2. What is to be said of the general empiricist argument that causality is inferred from observed regularity in our perceptions?
3. Granted that experience demands succession according to a rule, why must that rule apply to physical objects and not to perceptions as such? For if permanence is provided by the object, the requirements of time could be met by any contrasting succession.
4. Granted that necessary succession in objects is a condition of our empirical awareness of objective sequence, do we still need to prove that it is also a condition of the possibility of time itself?

These at least seem to be the problems with which Kant concerns himself, but the fact that his discussion throughout is dominated by his theory of inner sense and of the successive character of all our perceptual awareness lends colour to the view that he is constantly repeating himself and offering alternative proofs of the same proposition.

If these considerations are sound, the Analogy should be analysed as follows:

1. Addition in B. The synthesis of imagination determines inner sense only as regards the order of my own activities. It tells me nothing about any objective succession. Furthermore, time itself cannot be perceived; hence some activity of thought is required to provide the necessity which time as an *a priori* form demands. We must in fact conceive the relation between what precedes and what follows in time as necessarily determined, i.e. as irreversible. Thus causal interconnexion between objects is a condition of objective time relations without which apperception is impossible.

This, like the introductory paragraph of the First Analogy, is incomplete as it stands. It requires considerable supplementation from what follows, but is probably intended only as an indication of the fuller exposition in the sequel.

2. B 234-B 236 (*Die Apprehension . . . ist das Objekt*). A general psychological introduction to remind the reader of the position taken up in the Deduction and to indicate the application of the view to the present problem. It emphasizes the distinction between ideas and physical objects, but also repeats that the latter are phenomena and not things in themselves. Kant's point is as usual that succession of apprehension does not entail succession in the object. We have therefore to discover what is the criterion by which we are able to satisfy ourselves empirically that such succession really occurs. In his terminology, we must ask how the manifold is connected in the phenomenon itself, or what criterion have we of the empirical truth of the proposition 'A follows B' as distinct from 'I hear A after I hear B'?¹

3. B 236-B 240 (*Nun lasst uns . . . was geschieht, möglich*). *Necessary succession*. Reflection shows that empirically we assert objective succession only where the order of our perceptions is irreversible (the ship as contrasted with the house). In other words, by an objective order we mean and can mean nothing but an order which is determined by a rule, that is, a necessary order.

This passage is concerned not with succession in objects but simply with the distinction between different contents of perception; the contention is that any order (e.g. the succession of night and day) which is regarded as objective is so regarded in virtue of its subordination to the general criterion of irreversibility which entails necessity.

4. B 240-B 242 (*Zwar scheint es . . . möglich macht*).

Empiricism. The above view is to be contrasted with that of empiricism. We do not, Kant points out, first recognize objective sequence and then discover inductively that some instances of it reveal necessity, though this is what a casual examination of experience suggests. Further investigation has shown that all objective sequence is really recognized as necessary and that this recognition must actually be antecedent to the distinction between causal and other sequences of which empiricism claims to give an account.

5. B 242-B 244 (*Wir haben . . . empirisch erkennen*).

Necessary succession in the object. Kant claims here to prove that just as (in the Deduction) it was found that all connexions between *sensa* presupposed the existence of objects as grounds of

¹ See above, p. 189.

synthetic unity, so here the admitted capacity to apprehend some sequences of *sensa* as objective presupposes the necessary temporal succession of phenomena.

The last paragraph (*Wenn es nun . . .*) is, I think, intended to give the transcendental ground of this necessity,¹ namely, that any merely contingent sequence in pure time is unthinkable since the character of time as a form of a *a priori* intuition would thereby be destroyed. All succession in phenomena *qua* spatio-temporal must therefore be necessary and not contingent.

6. B 244–B 247 (*Zu aller Erfahrung . . . Erfahrung ist*).

Proof of the causal principle. I find the detailed argument here extremely difficult to follow, though the general line of Kant's thought is fairly clear. It is that, as time itself is not an object of possible experience, the parts of it cannot be said to determine one another's position. We cannot date particular times with reference to absolute time. But the parts of time must be necessarily determined (because of the *a priori* character of time as a whole). Hence spatio-temporal phenomena must date themselves, i.e. must stand in necessary time relations to one another to make objective sequence thinkable. In other words, phenomena must be subject to the schematized category of cause and effect, and therefore the category of ground and consequent is in fact valid in respect of phenomena, which is what the Second Analogy sets out to prove.

7. B 247 (*Hier äussert sich . . .*)—end of Analogy.

Explanatory remarks. These are mainly important as showing the intimate connexion which Kant recognized as existing between the notions of substance and cause.² They make it perfectly clear that Kant was not merely maintaining a regularity view of causation, though this is in any case obvious from his previous arguments.

Third Analogy

The Third Analogy stands or falls with the Second and requires no special comment. The argument for objective coexistence, by which is meant necessary connexion between physical bodies at a given moment, adds nothing to that in favour of necessary succession. The relation of it to the disjunctive form of judgement is a little obscure, but Kant's idea was presumably that disjunction

¹ Cf. the procedure in Deduction A, p. 174 above.

² Especially B 249 and 250, where he maintains explicitly that in the last resort nothing but a physical substance can be a cause.

implies a possibility of choice between alternatives, which is reflected in the reversibility of perception as between coexistent realities.

THE ARGUMENT OF THE ANALYTIC

I have not attempted to expound in detail the transcendental argument of the Analytic since to do so would involve a full commentary which is not within the scope of the present work. My aim has rather been to offer at least a provisional answer to three questions, namely:

1. Is it justifiable to hold that the Analytic as a whole is an attempt to establish *a priori* the basis of Newtonian physics within the limitations prescribed by the doctrine of inner sense?
2. Is it successful in achieving this purpose?
3. What are the further implications of the solution offered?

As regards the first of these questions, the answer does not seem to admit of any serious doubt. I am convinced, both on historical grounds and from consideration of Kant's argument itself, that his work was intended before everything else to establish the existence of a world of physical objects interacting causally with one another and generally behaving in a regular and predictable Newtonian fashion. Certainly it may be argued that much of what he says in the *Critique* is consistent with a view which is quite different from this, namely that by 'bodies' we mean simply collections of actual sensa related to one another not merely by juxtaposition but by laws springing from the nature of our own thought. Such a view may properly be called Kantian in essence, but there are surely two fatal objections in the way of attributing it to Kant himself. In the first place, to do this must involve complete disregard of all the circumstances of his intellectual environment, and of much of his own published work other than the *Critique of Pure Reason* itself. In particular, the *Anthropology*, the *Metaphysical Foundations of Natural Science*, and the *Opus Postumum* all seem quite inconsistent with any such interpretation unless we are prepared to believe that the *Critique of Pure Reason* demands an account of the nature of the physical world which Kant had not previously held and which he subsequently abandoned. In the second place, I hope that even the brief account which I have given here may make it evident that the distinction between general and transcendental logic and indeed the whole method of

the Analytic is against any simple phenomenalist interpretation of his position. Had Kant wished to maintain that bodies are synthetic wholes of sensa, he could have done so on his own assumptions without great difficulty and have ended the Analytic after a greatly simplified version of the Transcendental Deduction. There is no way of explaining the complicated argument of the Schematism and the Principles (especially the Anticipations of Perception and the Second Analogy) unless we admit that he is here concerned not with actual sensa but with the physical objects to which those sensa are 'referred'. As regards the second question, I feel much less confident about Kant's results than I do about the general rightness of his procedure. For, if his belief in the dependence of psychological data on physical modifications of the cortex is accepted (and no alternative to it which is scientifically plausible has yet been propounded), there seems no possibility of escaping the conclusion that *a priori* elements must be invoked to explain our experience. To put it differently, our acquaintance with the nature of the physical world cannot be explained by purely empirical and inductive investigation. Hence, unless we are to fall back on simple intuitive certainty, we are compelled to look for an explanation of this insight in the organization of the mind itself. This is what Kant rightly sets out to do. The question then is whether synthesis, space, time, and the categories as he conceives them are adequate to perform the task which he requires of them, and here I think we must in the end admit that they are not. His demonstration, in spite of its ingenuity, must surely break down when the relation between time and synthesis is properly investigated. For if, as he claims, the physical universe is intelligible *a priori* in virtue of its synthetic character, and if that synthetic character depends ultimately on the necessary nature of time, a vicious circle seems unavoidable. Time and synthesis would then depend on one another unless Kant were prepared to retreat from his main position and argue either that synthesis is to be conceived as a non-temporal activity of the real self or that we have immediate acquaintance with ourselves as both temporal and synthesizing. Either would seem to involve at least the drastic revision of the Critical position. Kant is thus committed to the unsatisfactory conclusion that the real self is an active and synthesizing agent, though he can never begin to explain how, in the absence of time, this is possible.

Thus the answer to my third question is simple. The cost of

Kant's attempted proof of the possibility of pure physics is a doctrine of the self which is thoroughly unsatisfactory, and to this doctrine his moral theory has to be accommodated. He is not completely unsuccessful in this endeavour, but it is important to observe the extent to which the unanswered and unanswerable questions arising as to the precise nature of and relation between the 'real' and the 'empirical' self can be traced back to his doctrine of inner sense and its development in the *Analytic*.

THE SELF

§ 1

After the preceding discussions it is hardly surprising to find that Kant's theory of the self is at best incompletely formulated and at worst incoherent and even self-contradictory. The theory of inner sense inevitably restricts him severely when the self considered as an object of empirical psychology comes up for consideration, and indeed it is the character of the phenomenal rather than that of the real self which gives rise to the worst of the difficulties. What is evident at the outset is the essential difference between the self and the object viewed as phenomena. In one sense we may even go so far as to say that there is no phenomenal self at all, since the phenomenal as object of knowledge needs to be spatial, whereas our intuitive knowledge of the self as appearance is subject only to inner, not to outer sense. But these data of inner sense are not as such capable of being received by the synthetic unity of apperception. They can be so only when they are related to objects in space. Indeed, we have no knowledge of the self as substance or as cause even in the empirical sense, though Kant is compelled both on ethical and epistemological grounds to assert that the data of inner sense, since they are admittedly temporal, must somehow be fitted into a causal nexus.

This is a very obscure and difficult position to maintain, yet it seems impossible for Kant to escape from it. To refute empirical idealism he must argue that knowledge of objects in space is presupposed by and not inferred from knowledge of the self; but to establish his ethical position he must maintain that the empirical self is causally determined.

Some further light is thrown on the nature of the problem by the solution to the Third Antinomy, but I do not at present see that any adequate solution from Kant's point of view is discoverable.

§ 2

The Third Antinomy maintains (as Kant is clearly entitled to do) that non-temporal necessitation is perfectly consistent with universal causality since the latter is concerned only with representations. In other words, causality is a formal characteristic imposed on phenomena by a synthetic act of mind and not something intrinsic to reality as such. This is a consequence of the distinction between noumena and phenomena and needs no special emphasis. Kant, however, is not interested merely in establishing the possibility of such non-empirical necessitation in general (the phrase¹ 'noumenal causality' is for obvious reasons misleading, though no terminology can be satisfactory). He wishes to show something much more specific, namely, that human free-will in the ordinary sense is compatible with the universal causality as demonstrated in the Second Analogy.

Anything like a full account of his ethical position is naturally out of place in a discussion of the doctrine of the *Critique of Pure Reason*, but a brief outline of it as far as the alleged antinomy between freedom and causality is concerned may throw some light on his theory of the self in relation to the distinction between phenomena and noumena.

We know ourselves only mediately by means of inner sense. The data of that sense, though they cannot, like those of outer sense, give rise to a genuine science, are none the less subject to the synthetic unity of apperception, and therefore must somehow be elements in the universal causal system of experience. How this can happen Kant nowhere explains, though it surely demands explanation since there is no permanent empirical substance to which these data can be referred as their subject. But whether within his own view he could have solved this problem or not, he remains inevitably convinced that empirical acts of sensing, willing, &c., must be regarded as events in a completely determined causal series.

As contrasted with this he conceives himself by pure reason as a free agent. More accurately, he regards the idea of a being which is autonomous in the origination of its own acts as a necessary conception, even though it is purely formal and admits of no schematization. It is not a possible object of experience, and is therefore beyond the reach of scientific inquiry. We can,

¹ See above, p. 148.

however, justifiably maintain that such a being, if it exists, must be determined by law; but that law will originate in itself alone. Such determination must be distinguished from two other kinds, namely:

- (a) *Arbitrium brutum*—determination entirely *ab extra*. This is the condition of animals and is hardly, if at all, to be distinguished from that of physical bodies. The use of the term *arbitrium* to describe it is somewhat misleading.
- (b) *Arbitrium liberum*—self-conscious choice in which the understanding is operative, but only as providing means to an end determined *ab extra*. This covers all acts recognized by hedonist and utilitarian ethical systems. These are rational in the sense that they involve the use of understanding, which is a rational faculty. But since their end is extraneous, they are not strictly so. They are, in Kantian terms, heteronomous not autonomous.

From this it follows that the law of pure reason, since it is not concerned with any end beyond the agent, must be purely formal in character, and indeed this is clear from the very conception of reason as concerned not directly with objects but with the direction of the activities of the understanding. Furthermore, we can maintain that the only possible demand of pure reason in respect of the maxims or principles of the understanding is that they should avoid contradiction both internally and with one another. Pure reason demands always a totality, that is a system which is a consistent whole.

Thus the law which governs the behaviour of the completely rational non-empirical self must be that the principles of its conduct must avoid contradiction. It cannot, however, by itself produce any such principles, since this is the function of sensibility and understanding. It may or may not pay to deceive. It cannot be rational to do so since the universalization of deceit as a maxim of conduct involves contradiction.¹ Reason, therefore, here as elsewhere has a limitative or restrictive function to perform. It forbids but does not, except by implication, initiate action. It can reject a maxim of the understanding as a motive to action in the light of its own superior law, which may now be expressed in Kant's own language as 'So act', &c. He might perhaps have stated his

¹ 'A should choose to deceive B' requires that 'B should choose to be deceived by A'. But to choose to be deceived involves a contradiction since B must already know the correct answer and therefore not be deceived at all.

meaning more clearly in the negative form 'Never act in accordance with a maxim which does not admit of universalization without contradiction'. In any case, the question now arises, 'Granted that I admit the existence of such a law of reason, is it possible for me to obey it? And, even if it is, why should I do so when such obedience admittedly conflicts with my interest?'

The solution of the Third Antinomy is supposed to answer the first part of this question, and, in the light of it, some idea may be reached of Kant's reply to the second.

The idea of a self whose acts are invariably controlled by the law of reason is for us an ideal. We are not even competent to recognize instances of such action under empirical conditions, even supposing them to occur. At present we cannot even say intelligibly that they ought to occur, since 'ought' implies 'can', and their possibility remains to be demonstrated. Now if the phenomenal world of the scientist were ultimate reality, such demonstration would be impossible, since we have already proved that all temporal events occur in accordance with the laws of physical causation and are thus determined entirely *ab extra*. But the phenomenal world is not ultimate. Metaphysically considered it is nothing but appearance and its laws cannot bind that of which it is the appearance, that is things and selves as such. Hence there is no logical objection to the doctrine that, although as phenomena my acts are all determined, they may none the less be ultimately the expressions of an autonomous real self. Even this self, however, cannot properly be supposed to correspond to the ideal of reason, since, if it did, we should at least expect that its appearance would exhibit somewhat more conformity to moral law than is usually the case. We can, however, say that it ought to conform, since by definition it is autonomous and therefore capable of conforming. What this amounts to is that we may reasonably believe (though we cannot prove)

- (a) that we are autonomous agents,
- (b) that we do not necessarily act as rational beings,
- (c) that we ought to do so.

It is impossible to avoid misleading terminology here. The real self is timeless, and we cannot understand the meaning of temporal terms like 'act' in relation to it. In fact we do not know *how* an autonomous self can be possible, nor do we need to know. Provided we can assert without contradiction *that* it is possible, we can restrict ourselves to appearances on which alone (though

inadequately) we are competent to pass ethical judgements. What is now needed to give plausibility to the view is some empirical motive which might indicate or be the analogon of the autonomous decision of the real self to act in accordance with the fundamental ethical principle. Acts done from such a motive would not be exempt from causality, since this is inconceivable. But we might expect to find that their proximate cause would appear as being in the agent's own personality rather than in environmental conditions. Such a motive is actually provided by the common notion of duty, since to do one's duty is generally and rightly thought of as implying self-determination in accordance with moral law without any ulterior purpose. Hence action done from the empirical motive of respect for moral law may rightly be described both as obligatory and ethical, though in strictness both these terms are significant only of the real self and have no application in the phenomenal sphere.

§ 3

We are not here concerned with Kant's merits as a moralist, but only with the rather peculiar view about the self to which his metaphysical inquiry has led him. On the face of it the doctrine of inner sense, combined with that of phenomenal determination with which in the *Analytic* it is combined, can lead nowhere but to complete behaviourism as far as empirical psychology is concerned. For Kant all knowledge of the phenomenal must in the end go back to physics, and the notion of the regulative function of reason can only conceal this necessity. But Kant's behaviourism is by no means unqualified. Morals, which he sees clearly would be meaningless if the *Analytic* were the whole truth, is ostensibly saved at the cost of being transferred from the sphere of knowledge to that of belief, and this belief is by no means the product of piety alone. On the contrary, the real self is ultimately required to establish the phenomenal behaviourism of the *Analytic* which would otherwise be suicidal. It can survive only if the existence of a non-empirical activity of synthesis is admitted, and such an activity must inevitably be exercised by the real self since it is anterior to time and is required to make temporal experience possible. Unfortunately, however, the existence of a non-temporal synthesizing faculty, even if we can understand what this means, cannot be established either by intuition or empirical reasoning. How far the transcendental arguments of the *Analytic* carry conviction about

it is at best a matter of opinion. What matters is that without it Kant's ethical system, though it may be right, can certainly not be proved; but with it, his fundamental assumption as to the emptiness of concepts without intuitions calls for revision.

KANT'S PHILOSOPHICAL LEGACY

'In this enquiry I have made completeness my chief aim, and I venture to assert that there is not a single metaphysical problem which has not been solved, or for the solution of which the key at least has not been supplied.'¹ Such was Kant's claim in the Preface to the first edition of the *Critique*, and although the indignation and contempt with which he anticipated that his 'arrogant and vain-glorious pretensions' would be greeted have not been withheld, it was neither foolish nor unjustifiable. His achievement was to expose once and for all the pretensions of 'ontology' and 'rational' science and to set philosophy on the right road not by discarding metaphysical speculation as valueless but making a steady and persistent attempt to elucidate the implications of contemporary scientific methods and doctrines; but since these have developed in ways which could not possibly have been foreseen in his day, it is not surprising that neither his problems nor his solutions are, as they stand, relevant to the situation as it is now. The weakness or rather the incompleteness of the *Critique* arises from the unavoidable shortcomings of Kant as a scientist, not as a philosopher; for if the simple theories of Newtonian mechanics had been the final answer to all physical problems, then the *Critique* or something not very different from it would have been, as he supposed that it was, the last word in metaphysics. The resulting situation would, as we have seen, have been uncomfortable for psychology and unsatisfactory for ethics, and the amount of faith by which knowledge required to be supplemented to produce a coherent view of the universe would have been considerable, but no other answer would have been tenable. In fact, however, the scientific optimism of the physicists was premature, and the advances in mathematical and experimental technique of the nineteenth and even more of the twentieth century have proved that Kant's apparatus of categories, though well adapted for his purpose, altogether lacked the completeness and finality which he attributed to it. Neither the table of judgments nor the categories derived from it have been equal to the

¹ A xiii.

strain which modern physics and logical analysis have placed on them. To say this, however, is to criticize not Kant's transcendental method as such but the assumptions on which he based his employment of it. Some of these have already been investigated, and I believe that consideration of them leads to the conclusion that Kant's weakest point was his readiness to take for granted without serious question the ultimate character of the disjunctions both in physics and in ethics which contemporary thought accepted. There must either be rigid causal necessity or bare chaos; action must be either completely rational or ethically worthless, and so on. Only in considering the problem of mechanism and organism does he seem to hesitate, and even there he was in the end faithful to the disjunction and admitted that in his view the distinction must be regarded as absolute.

It was the contribution of Hegel to recognize that this attitude simply would not do, though the notion of dialectical thinking by which he claimed to transcend disjunctions, involving as it does that constitutive employment of ideas which Kant had rightly condemned, has perhaps done more philosophical damage than any other metaphysical speculation in history.

The possibility at least of a more satisfactory method of dealing with the problem is indicated by the scientific development which more than anything else has rendered Kant's detailed view, though not his general procedure, obsolete, namely the emergence of the concept of probability as a genuine physical category. This could not have been anticipated by Kant or by anyone else in the eighteenth century. The whole scientific and logical outlook of the period took it for granted that probability was a characteristic of propositions and not of the events to which propositions referred; and the mathematical theory of it, though not by any means unknown, was thought to be of importance only to those interested in remunerative games of chance. Even now physicists are far from unanimous with regard to it, for belief in substance and causality in practically the Kantian sense is well established and hard to eradicate. Yet there can be no *a priori* objection to the substitution of probability for causation, and no practical difficulty is involved in the admission that necessity and impossibility, as far as the physical universe is concerned, are simply limiting cases of probability. We could still talk intelligibly of physical impossibilities just as we still accept the axioms of Euclid as being valid of phenomena while admitting the truth of Einstein's theory

of relativity. No one, however, will suppose that Kant could have changed his views on space and cause without rewriting not merely the *Critique of Pure Reason* but the whole of his philosophical works; but it should be emphasized that this would involve not the abandonment but the natural evolution of the Critical Philosophy. The evidence which now precludes us from regarding the views of Euclid and Newton as satisfactory is experimental evidence, and what it proves is not that we can operate without categories but that the categorial structure of thought and phenomena is far more complex than it appears to be at first sight. Some diminution of the *a priori* element both in geometry and physics is perhaps involved, but it is surely good sense as well as good Criticism to maintain that so much *a priori* insight only should be claimed into the nature of phenomena as is required to explain our actual experience.

By our standards Kant appears as essentially a rationalist because the physics which was his subject-matter was itself superficially more *a priori* and less empirical than its modern counterpart. Whether this contrast rests on anything more substantial than a misunderstanding of probability as a physical concept is highly dubious and cannot be investigated here. It has in any case no bearing on the vital principle which Kant maintained, which is that neither rationalism nor empiricism by itself can offer any satisfactory account of the nature of the universe. So much would be generally acknowledged, but what is liable to be overlooked, because the special purpose of the *Analytic* is itself not always clearly recognized, is that in the end it was always knowledge gained by observation and experiment which Kant held to be of importance, and in this sense he never went back on his pre-Critical faith in empiricism. The conclusion of the *Critique of Practical Reason* which serves as his epitaph is indeed somewhat misleading and might well be replaced by his firm conviction expressed in the *Prolegomena*: *Nur in der Erfahrung ist Wahrheit.*

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